Curriculum for At Risk Students

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Curriculum for At Risk Students

By

Pamela W. Bean

A thesis project submitted to the Division of Curriculum and Instruction in partial fulfillment of the requirements for the degree of Master of Education.

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Abstract

This curriculum project reviews the research on students who have been labeled drop-outs and/or low-achievers. Several different types of teaching models were reviewed to determine the best model to be used for drop-out and/or low-achieving students.

The project includes curriculum materials that correspond to the Minimum Level Skills objectives for the General Math II course designated by the Duval County School System in Florida. The curriculum also corresponds to the required textbook for the General Math II course. This project strives to increase the ability of the students in the Graduation Enhancement Program to pass the Minimum Level Skills Test and increase their knowledge in the area of basic and common sense mathematic concepts.
Chapter 1

Introduction

Considerable evidence exists indicating that many students who enter high school do not understand basic math concepts and cannot perform basic math problems. Some students cannot perform the standard operations of adding, subtracting, multiplying, and dividing of whole numbers, decimals and fractions, and percent conversions. While these students have been working with these concepts since elementary school, many of them reach high school without knowing how to solve these types of problems.

When high-school mathematics teachers face classes of 30-35 students, it is nearly impossible to work everyday with every student who may need individual help. Further, there are many interruptions throughout the year that delay plans and put the students behind. Frustration increases when a teacher realizes that another year has gone by in the students' lives and they still cannot perform the basic concepts.

The question, however, still remains: if students cannot perform basic mathematical operations by the
time they leave high school, how are they going to survive in the everyday world? To even work in a fast food restaurant, for example, they have to be able to count change correctly. Unfortunately, some teenagers cannot do this. They must have a cash register that tells them how much change to give back, but they still cannot count it back so that it adds up to the amount of money the customer gave them.

Another example of using basic math skills in the everyday world is figuring grocery prices and what might be the best buy of a product. These things involve fractions and decimals. If students do not understand fractions, they will have a difficult time understanding decimals and percents. When people buy something on credit, they need to understand how to work with percents to calculate finance charges. Most people have checking accounts which involve working with decimals. Even cooking involves math because of the work with measurements in a recipe. All people use basic math concepts in everyday life, whether they realize it or not. Therefore, it is very important for students to understand these concepts and be able to perform basic math operations if they plan on surviving
Smaller classes make it possible for teachers to work with more students on a one-to-one basis. The smaller classes of students in a special Florida program called "Graduation Enhancement" for potential at-risk students and low achievers provide environments where the teacher is able to give more one-on-one instruction. Even in a small class, however, there are varying ability levels among the students. Some students are able to work at a normal pace, while others need more practice on certain concepts. Because of this, additional resources for reemphasizing and retesting students in problem areas are needed. While there are plenty of resources available, such as workbooks, other textbooks, and computer programs, they are often not readily available to teachers nor applicable for all concepts.

Brophy (1986), Peterson (1986), and Stallings (1980) believe that effective programs for at-risk students should include the following characteristics: greater structure and support than a traditional program, active teaching, instruction emphasizing student engagement, frequent feedback, small steps with
continuous redundancy and a high success rate.

John B. Carroll (1963) derived a model of school learning to help explain the many variables that affect learning rates. Carroll's model also includes many of the above mentioned characteristics. One of the most important variables was time: "People take different amounts of time to achieve a given level of proficiency." (Fisher & Berliner, 1985, p. 31). Two other important variables included in the model were opportunity to learn and quality of instruction. From Carroll's model of school learning came the basis for the model of mastery learning.

Mastery learning is a method of teaching that has well defined learning objectives, checks student learning on a regular basis, and gives students immediate feedback so that students who do not master a given skill or concept can be given corrective instruction. Mastery learning allows students to master a concept before going on to another concept. It also allows students to work by themselves or in groups. It allows the students who do master the concepts to go on and not to be held back by students who may have difficulty with a concept.
Mastery learning also gives structure to a class. Mastery learning seems to incorporate more of the characteristics of an effective program for at-risk students than the other models of teaching such as cooperative learning, individualization, computer assisted instruction, ability grouping, and teams-games-tournaments. A mastery learning curriculum offers potential for helping the at-risk, low-achieving students to master the Minimum Level Skill (MLS) objectives for the General Math II course and pass the MLS test.

A mastery learning curriculum developed for each Minimum Level Skill (MLS) objective set by the Duval County Florida Public Schools would be an excellent resource for the teachers of these mathematics students. Such a curriculum would be used with students who need more practice on certain concepts. The high achievers would not have to be kept back or be given additional or trivial work while the low achievers master a concept. The low achievers would not have to be left behind and remain lost when the class went on to a new concept. Teachers could give more one-on-one instruction. Students could also
receive immediate feedback on a concept with the use of quizzes instead of having to wait a week or two to find out if they understand a concept. If students wait too long for feedback on quizzes and exams, more concepts may have been introduced which could confuse and frustrate students further if they did not master the previous concepts.

The mastery learning model was chosen for this project to help the at-risk, low-achieving student master the Minimum Level Skill objectives because it seemed to be the most appropriate for this type of student. It incorporates more of the characteristics of an effective program for at-risk students than the other models reviewed.

The mastery learning curriculum developed in this project is intended to be used as supplemental material and not by itself. The students still will receive instruction by the teacher on new concepts, will use peer tutoring techniques, and will use the available computer programs. The curriculum is intended to help students at the secondary level in General Math II master the Duval County (Florida) Minimum Level Skills objectives for the course and succeed in passing the
MLS exam by using strategies involving high structure and immediate feedback.
Chapter 2

Defining At-Risk Students

The review of the related literature shows that there are many models of instruction that will benefit at-risk and low-achieving students. The models may be used by themselves or in combination with another. Several of these models will be discussed in order to indicate why they do work for at-risk and low-achieving students.

Slavin, Karweit, and Madden (1989) believe that virtually every child is capable of attaining an adequate level of achievement in the basic skills. Why is it, then, that so many students reach high school and cannot perform basic skills? And if they cannot perform basic skills, how are they going to survive in this world?

When students leave high school with poor basic skills, many times they are headed for a life of poverty and dependence (Slavin, Karweit, & Madden, 1989). Students who lack basic skills cannot easily find jobs and so become a problem for the U.S. economy. Recent studies of cities with very high growth rates
indicate that even when there are many entry-level jobs, such as fast-food jobs, there are many workers who cannot qualify for them because of poor basic skills. The type of student mentioned above has been labeled by the literature as an "at-risk student."

Students who are at-risk are those who, on the basis of several risk factors, are unlikely to graduate from high school. Among these factors would be low achievement, retention in grade, behavior problems, poor attendance, low socioeconomic status, and attendance at schools with large numbers of poor students. (Slavin, Karweit, & Madden, 1989, p. 5)

These students have normal intelligence but they are failing to achieve the basic skills necessary for success in school and in life. The challenge continues to be to teach, and even to overteach, such basic skills which students have been repeatedly taught but about which they could really care less (DeVries & Slavin, 1978).

DeVries and Slavin (1978) state that there are three factors that contribute to the challenge of teaching in a primary or secondary school. They are
"student values which are placed on events outside the classroom, an increasing diversity of student skill levels, and a need to teach basic skills even after repeated exposure by students to these skills" (p. 29).

What can educators do for students who are at-risk for failing school? What type of programs are there for at-risk students? What programs work best for at-risk students? These are questions to which this review of related literature will respond.

Slavin and Madden (1989) believe that one of the most frequently used methods to deal with at-risk students is the least effective—that is by failing them. Failing students gives them lower self-esteem than they already have and puts them even further behind their classmates.

Another widely used program is the traditional diagnostic or prescriptive "pullout" program. In pullout programs, students are taken out of their homeroom classes for thirty-to-forty-minute periods, during which time they receive remedial instruction in a subject with which they are having difficulty (Slavin, Karweit, & Madden, 1989). Pullout programs are the most widely used programs under Chapter 1.
Pullout programs may keep at-risk students from falling further behind their classmates, but this effect is limited to the early grades and works better in mathematics than in reading (Slavin & Madden, 1989).

Pullout programs have been criticized because the instruction that is provided is said to be poorly integrated with students' regular classroom work. These programs disrupt students' regular classroom schedule and label students, an outcome which also decreases students' self-esteem (Slavin & Madden, 1989).

Because of the drawbacks of pullout programs, in-class models have been developed. In an in-class model, a Chapter 1 teacher or special education researcher or aide works with the identified students right in the regular classroom. These models were found to be no more effective than the pullout programs (Slavin & Madden, 1989).

**Instructional Techniques That Work For At-Risk Students**

Teachers of at-risk students need to do what they do better and not necessarily perform their tasks differently. Brophy (1986), Peterson (1986), and
Stallings (1980) identify effective instructional procedures for at-risk students:

1) Greater structure and support--Course expectations need to be clearly laid out and assignments and grades need to be designed to encourage achievement.

2) Active teaching--The teacher needs to carry the content to students personally through interactive teaching rather than depending upon curricular materials (e.g., the text, workbooks) to do so.

3) Instruction emphasizing student engagement--Interactive teaching with high questioning levels invites students to participate in lessons.

4) More frequent feedback--Student progress should be monitored frequently through classroom questions, quizzes and assignments.

5) Smaller steps with more redundancy--Content should be broken down into smaller steps and student mastery should be insured before moving on to the next step. Constant review of earlier materials provides for overlearning.

6) Higher success rates--Classroom questions,
assignments and quizzes should be designed to maximize opportunities for success.

Slavin and Madden (1989) conducted a thorough review of the research on "every imaginable approach designed to increase student reading and mathematics achievement in the elementary grades" (p. 5). They found the effective programs fell into three broad categories: prevention, classroom change, and remediation.

Because prevention programs usually are intended for the preschool, kindergarten, or first grade, they are thus outside the scope of this review of the literature which focuses on the secondary school. Remediation programs are also outside the scope of this review since Slavin and Madden (1989) state that one of the best ways to reduce the number of students who need to remediate, is to provide the best possible classroom instruction in the first place. "Teachers should use instructional methods with a demonstrated capacity to accelerate student achievement, especially that of students at-risk" (p. 9). Therefore, the programs to be discussed fall under their category of classroom change programs.
Slavin and Madden (1989) identify some general features which characterize effective programs for students at-risk of school failure. Effective programs are comprehensive and well-planned alternatives to traditional methods. Effective preventive and remedial programs are intensive and use either one-to-one tutoring or individualized computer-assisted instruction. Effective programs also assess a student’s progress frequently and change the instruction to meet the student’s needs.

The problem with traditional methods used with students at-risk of school failure is that schools wait until students are far behind and then bring in remedial programs. However, when students are one or more years behind in school, even the best remedial programs have little effect (Slavin & Madden, 1989). But any effect is better than none, and there are programs that do have a positive effect on at-risk, low-achieving students.

**Programs That Work for At-Risk Students**

**Continuous Progress and Cooperative Learning Models.** In Slavin and Madden’s (1989) search for programs to review, the most effective ones fell into
two categories: continuous progress models and certain forms of cooperative learning. "In continuous progress models, students proceed at their own pace through a sequence of well-defined instructional objectives. They are taught in small groups composed of students at similar skill levels" (p. 9).

Several of the best evaluated continuous progress programs are DISTAR, U-SAIL, and PEGASUS (Slavin & Madden, 1989). All of these programs use similar flexible groupings and adapt the hierarchies of skills to the current curriculum and teaching methods.

In cooperative learning, students work in small learning teams to master material initially presented by the teacher. When the teams are rewarded based on the individual learning of all team members, cooperative learning methods can be consistently effective in increasing student achievement compared to traditionally taught control groups. (Slavin & Madden, 1989, p. 10)

Many studies have shown that students in cooperative learning groups learn more than do students in traditional programs (Slavin & Karweit, 1984). Two successful cooperative learning methods combine the use
of cooperative teams with forms of continuous progress. In Team Accelerated Instruction (TAI) and Cooperative Integrated Reading and Composition (CIRC), students first learn in small, same ability groups and then work in mixed ability groups (Slavin & Madden, 1989).

**Computer-Assisted Instruction.** A supplementary model of instruction that helps to meet the needs of at-risk students is computer-assisted instruction (CAI). Slavin and Madden (1989) note that there has not been much research done on computer-assisted instruction and what has been done is not consistent with positive effects. The best evaluated and most consistently effective CAI models have been forms of the Computer Curriculum Corporation’s (CCC) drill-and-practice programs. Students spend about 10 minutes per day in addition to regular class time using CCC programs. Slavin and Madden summarize that successful CAI programs tend to be very expensive and their positive effects are moderate in size, so there is some question about the cost-effectiveness of this approach. As software continues to improve and hardware becomes less expensive, computers can become an important part
of a remedial strategy. (p. 11)

Ability Grouping. Another common method that has shown positive results with at-risk students and which deals with heterogeneity is ability grouping. Borg and Prpich (1966) compared the two-year performance of slow learning tenth-grade students assigned either to ability-grouped English classes or to random group English classes.

In the first year there were no significant differences in English achievement, but during the second year the ability-grouped students made significantly greater gains on an essay test. It was also found that students in the ability-grouped classes "participated more and made contributions of better quality" (Borg & Prpich, 1966, p. 238). The attitude of ability-grouped students toward English was significantly more favorable than that of students in regular classes during the first year, but this difference was not significant during the second year. There was also some evidence that students who were in ability groups had better self-concepts during both years.

There have been studies comparing within-class
ability grouping to whole-class ability grouping that have found greater learning in the within-class ability-grouped classes, although a few studies have failed to find significant differences between the two groups (Slavin & Karweit, 1985). There is disagreement between the achievements of within-class and whole-class ability grouping. One reason for this may be that low ability classes are sometimes difficult to teach because of behavior problems, students’ low morale, and a lack of concern for learning. On the other hand, low ability students in a heterogenous class may perform at a higher level because they are still members of a class that has fewer behavior problems, reflects higher morale, and values learning more highly (Slavin & Karweit, 1985).

Teams-Games-Tournaments. A classroom program called Teams-Games-Tournaments (TGT) positively addresses the problems of student values, the variety of student abilities in a typical class, and the need for basic skills to be taught (DeVries & Edwards, 1978). The learning games of TGT are "activity structures in which players use a body of knowledge or set of skills as resources in their competition with
other players" (p. 308). Using a learning game in the classroom provides students with immediate feedback because students are informed immediately after each game whether they won or lost and why.

TGT is not meant to replace regular classroom instruction but to be used as a supplement. It takes about half the class time per week and the skills taught by the teacher are being reinforced during this time. TGT can be used to enhance learning in any subject.

In TGT, students are assigned to teams, each of which has a high achiever, a low achiever, and a few average achievers. There are practice sessions in which teammates help each other with reviewing skills taught by the teacher. There are tournaments in which the students compete individually against students of their own level from other teams.

"Team competition seems to be one way to redirect student values--to support, not oppose, achievement in the classroom" (DeVries & Slavin, 1978, p. 30). It also allows the high achievers to help the low achievers. The use of TGT appears promising for improving student attitudes, handling students of
varying abilities, and reinforcing basic skills. Furthermore, students are more willing to continue to work on basic skills because TGT gives them an opportunity to show their skills in front of their peers.

The research on TGT has found that the program has increased achievement significantly more than control classes, specifically in basic math, language arts, and reading and that these positive effects have been replicated. "TGT took students who were apathetic toward academic work, which most at-risk students are, and made them interested in how they themselves and their classmates were doing" (DeVries & Slavin, 1978, p. 36).

Low Attainers Mathematics Project. In 1987 a curriculum development study based on the Low Attainers Mathematics Project (LAMP) was carried out at the Mathematics Curriculum Development Centre at the West Sussex Institute of Higher Education in England (Backhouse, 1989). The project was aimed at developing good practice in the teaching of low achievers in mathematics. The basic concept of the project was teachers working together to develop strategies and
resources for teaching mathematics.

The project showed that low attainers were able to achieve more in mathematics than they could previously. It also changed teachers' ideas about mathematics and their classroom methods. The results here reinforce what was said earlier by Slavin—that the best way to reduce the number of students who need remediation is to provide the best possible classroom instruction in the first place.

**Individualized Instruction.** Miller (1976) defines individualized instruction as that in which each pupil participates in setting his own goals, works at his own rate (either alone or as a member of a small group) . . . and participates in evaluating his own progress. Traditional instruction is defined as all methods in which pupils are taught as a class. It includes homogeneous or heterogeneous grouping, does not preclude the use of audio-visual aids, committee work, or any other techniques traditionally used by teachers to help students learn. (p. 345) Individualization has been seen as a way to meet the needs of a group of students with different ability
levels, especially in mathematics, because so many concepts build on previous concepts. Individualization offers instruction appropriate to each student's needs (Slavin, 1987a).

As other instructional programs have developed over the years, the use of individualized instruction has diminished because it was difficult for the teacher to manage and because it required a lot of assistance with the paperwork. Students in individualized programs usually receive little direct instruction from the teacher. Yet, mathematical ideas must be explained, shown, and experienced--things which need to be done by a teacher. For this reason and others, research on the individualized mathematics programs of the 1960s and 1970s generally failed to find consistent benefits for students' achievement (Horak, 1981; Miller, 1976; Schoen, 1976; Schoen, 1986).

Miller's 1976 review of research on individualized programs found that the individualized approach is just as effective in promoting mathematics achievement as the traditional approach but that it does not have a distinct advantage over the traditional. The individualized approach also seemed to have little
effect on students' attitude toward mathematics. His review found that motivation in such programs is difficult to maintain over long periods of time. Achievement gains also tend to be very small when compared to traditional methods. The research showed that individualized instruction did benefit low-ability students and than self-concepts were also significantly changed for these students. Individualized programs are not successful with all types of students since some students require the structure of a traditional program and others need high motivation. Miller therefore recommends that both individualized and traditional programs be offered.

Slavin (1987a) feels that the ideas of individualized instruction were promising but they failed because "they overlooked students' needs for conceptual instruction from the teacher and their capacity to take responsibility for the management of the individualized programs. Teamed up with cooperative learning, individualized instruction may fulfill its once-bright promise" (p. 16).

Team Assisted Individualization (TAI) which uses cooperative learning teams and teacher-led instruction
has been found in three recent studies to be effective in increasing mathematics achievement more than traditional group-paced instructional methods (Slavin, Leavey, & Madden, 1984; Slavin, Madden, & Leavey, 1984; Slavin & Karweit, 1985). TAI has also been designated as an exemplary program by the U.S. Department of Education’s National Diffusion Network because of its achievement effects (Slavin, 1987a).

Slavin and Karweit (1985) reviewed three different teaching methods of mathematics instruction used in two different experiments. The first experiment involved urban, integrated untracked schools and the second experiment involved rural, mostly white, tracked schools. The first model was a whole-class grouped-paced mathematics program. The second model involved within-class ability grouping, and the third model used Team Assisted Instruction (TAI). A control group in which traditional classroom teaching was done was also used in the second experiment.

The results found that computations of basic skills for TAI and the ability-grouped models were higher than for the whole-class model, but all three models were significantly better on basic skill
computations than the control group. TAI students also scored higher on attitude measures than any of the other models.

These results also show that TAI and the ability-grouped model, which were designed for use with students of varying ability levels, work for all students.

The fact that the positive effects of TAI and the ability-grouped model were equal for all students might suggest that they are effective not because they accommodate heterogeneity in student preparation and learning rate, but because they provide more effective instruction in general.

(Slavin & Karweit, 1985, p. 364)

What Slavin and Karweit’s study shows is that if management and motivation problems in a heterogeneous class can be overcome, then these methods may increase student achievement.

Schoen (1986) feels that individualized instruction should supplement effective teacher-led instruction and should not be the sole source of instruction. This combination of instructional approaches has the best chance of meeting the diverse
needs of individual students while still maintaining a high level of achievement among the entire class.

A supplemental program of individualization should have the following general characteristics:

(1) it should be manageable, that is, the individualized activities should not detract from the quality and quantity of on-task time for all students; (2) it should include ample opportunities for the teacher to interact with all students concerning the mathematical content, and (3) it should provide sufficient direction for all students so that they rarely wait for feedback or wonder what to do next (p. 44).

Bradley (1968) found that individualized daily assignments provided students with remediation and enrichment as well as reinforcement on each days’ concepts. Students who received individualized assignments yielded higher gains on achievement tests when compared to students who received traditional assignments.

Another study done in California (Broussard, 1968) compared the achievement in mathematics of inner-city students who were involved in an individualized program
using various activities with that of students who received instruction in the traditional textbook, class-group method of instruction. The results found that the students in the individualized program achieved significantly higher gains in computational skills than did the students in the class-group program. This study also shows that personalizing and individualizing instruction can make a significant difference in improving the learning of all students.

Mastery Learning. The theory of mastery learning was developed from Carroll's (1963) model of school learning. Mastery learning is based on the simple belief that all children can learn when provided with conditions that are appropriate for their learning (Guskey & Gates, 1986).

The main characteristics of mastery learning methods are that learning objectives are well defined and appropriately sequenced, student learning is regularly checked and immediate feedback is given so that students who do not master a given skill or concept can be given corrective instruction. These characteristics coincide with the characteristics for effective programs for at-risk students. Mastery
learning stresses that student learning should be evaluated in terms of criterion-referenced rather than norm-referenced standards (Guskey & Gates, 1986). "What defines mastery learning approaches is the organization of time and resources to ensure that most students are able to master instructional objectives" (Slavin, 1987a, p. 14).

In a mastery learning program, there is a "feedback-corrective process about every two or three weeks in which a formative test is given to students, followed by corrective instruction, and then by a parallel formative test" (Bloom, 1987, p. 507). The first step in the feedback-corrective process begins with the teacher identifying the common errors of the students. Then, the teacher explains the ideas involved using a different form of instruction from what was originally used in teaching these ideas to the class. A second step in this feedback-corrective process is for groups of two or three students to help each other on the items they missed on the test. A third step is for individual students to refer to the instructional material keyed to the test items that they are not sure they understand. This three-step-
process should be used after each two-or-three-week learning unit before the students take the parallel formative test.

Mastery learning as a model has certain characteristics. It is usually a group-based teacher-paced approach to instruction in which students learn, for the most part, in cooperation with their classmates. Mastery learning is designed for use in typical classroom situations where instructional time and curriculum are relatively fixed, and the teacher has charge of 25 or more students. (Guskey & Gates, 1986, p. 74)

Generally, teachers set the pace for instruction in a mastery learning model because it is assumed that students in elementary grades and lower-achieving students lack the motivation necessary to pace themselves successfully.

A form of mastery learning is the continuous progress program where students work on individualized units entirely at their own rates. In continuous progress programs, a sequence of well-defined instructional objectives is established for unit tests,
after which students receive corrective activities if they do not meet the set criteria the first time (Slavin & Madden, 1989). However, students are taught in small groups composed of students at similar skill levels. Slavin and Madden’s review of research indicates that the continuous progress model is one of the most effective models for the at-risk student.

Group-based mastery learning is the most commonly used form of mastery learning in elementary and secondary schools (Slavin, 1987b). In group-based mastery learning, the teacher instructs the class at one pace. A "formative test" is given at the end of each unit. A mastery level is usually set and any students who do not meet that level will receive corrective instruction. This instruction may be tutoring by other students or the teacher, small group sessions led by the teacher, or alternative activities or material for students to work on by themselves. Alternative activities or materials should be different from the original instruction. After the corrective instruction, the students take a parallel formative or "summative" test.

As previously stated, mastery learning theorists
believe that given enough time all students can learn (Slavin, 1987b). If some students take much longer than others to learn a particular concept, then one of two things must happen. Either the corrective instruction must be given outside of the class time, or students who have already mastered the concept will spend time waiting for their classmates to catch up. This is a problem that all teachers face at some time in their careers. It is too expensive and difficult to arrange extra time for students who need it; further, giving enrichment or other activities to the students who have already mastered the concept may or may not be beneficial for those students. So mastery learning does present a problem, a choice between coverage and content mastery. Even for low achievers, it may not be beneficial for them to try and master each objective. On the other hand, Anderson and Burns (1987) offer the challenge that if mastery teachers are pacing their instruction so slowly that the students are being hindered, it is the fault of the teacher and not the program.

Slavin (1987b) points out that the mastery learning theorists, e.g., Block (1972), Bloom (1976),
Guskey and Gates (1985), argue that the "extra time" is not as much of a problem as it seems because the time needed for corrective instruction should diminish over time. By ensuring that all students have mastered the prerequisite skills for each new unit, the amount of corrective instruction on each successive unit will diminish. It is true that under mastery learning some students spend a great deal more time on a particular subject than they would ordinarily. But without this additional time, there would be little improvement beyond that gained from frequent testing with feedback (Guskey, 1987).

When mastery learning is implemented well, results are usually very impressive (Guskey, 1987). In programs with attractive, well-designed corrective activities and also exciting, challenging, high-level enrichment activities, the results are likely to be better still.

Block and Burns (1976) reviewed the results of studies on group-based mastery learning programs. They found that these programs did not yield the large effects on student achievement that mastery learning theorists believed were possible, but the results were
consistently positive. Nearly all programs led to
greater student learning than non-mastery programs.
Group-based mastery learning programs also produced
positive effects on how the students felt about the
subject they were taking and on their own self-esteem.
None of the studies showed greater student learning by
the control groups. Group-based mastery learning
programs also appear to have a positive effect on
retention of material although not quite as large an
effect as on achievement.

Bloom (1987) suggested that mastery learning might
be one way to offer a majority of students more
appropriate instructional conditions. He also believed
that through a program such as mastery learning,
students' learning rates could be changed and that slow
learners could be helped to learn faster. Two studies
(Anderson, 1975) suggest that "differences between fast
and slow learners do decrease under mastery learning.
That is, learning rate does appear to be alterable, and
mastery learning procedures may be one way slow
learners can be helped to increase their learning rate"
(p. 77).

Several benefits have been mentioned for group-
based mastery learning (Guskey & Gates, 1986). Students can organize their learning better, respond to feedback, pace themselves and correct their errors. They cooperate with one another and help one another more frequently. The techniques can be implemented into a regular classroom without a lot of necessary revisions in instructional procedures, class organization or school policy.

In spite of Slavin's (1987b) pessimistic view of mastery learning--based on the particular set of studies he selected--there is evidence that mastery learning in some form can be helpful in improving education for the majority of the students. Bloom (1987) readily admits that "the top 10% of the students in a class will probably get less out of a mastery learning program than the other 90% of the students" (p. 508). But he believes that the schools need to improve the chances for success for the majority of the students which include the at-risk and low-achieving students.
Chapter 3

Curriculum Development Procedures

The purpose of this project was to develop supplementary curriculum materials for the General Math II course at the secondary level at one's high school in Duval County, Florida. So that students might more likely pass the MLS exam, the curriculum corresponds to the Minimum Level Skills (MLS) Objectives of the General Math II course in the Duval County (Florida) School System.

The MLS objectives were established by the Duval County School System as the minimum skills that a student should acquire in order to pass an academic class. Students must take a Minimum Level Skills Test at the end of the school year in each academic class to determine whether or not they have mastered the skills required for that course. They must receive a score of 75% or above to pass the test and class.

The need for this curriculum was based on classroom experience, teacher observations, lack of available material for some of the MLS objectives, and documentation of the efficiency of mastery learning.
The need was identified by observing that students do well when one concept at a time is presented, but they tend to forget previously taught concepts if they are not continuously reinforced.

There are two worksheets for each MLS objective. These are to be used with the required textbook and computer programs. Experience indicates that after this amount of exposure, students are likely to master the concepts before being tested on them. The worksheets may be used individually or with groups. Two 5-to-10 problem quizzes for each objective are also included.

Worksheets and quizzes help give structure to a class and give students frequent feedback—characteristics for effective programs for at-risk students and mastery learning according to research literature. With worksheets and quizzes, a teacher would be able to give feedback and provide corrective instruction. This type of instruction is the group-based mastery learning model of teaching reviewed from Slavin (1987b) and Guskey and Gates (1986).

A cumulative chapter examination exists at the end of each chapter. The majority of the exam tests the
concepts from the chapter. The remainder of the exam tests previously taught MLS objectives. With each exam being cumulative, students are given a greater opportunity to master the MLS concepts before taking the MLS and final exams. The objectives will have been reviewed and reinforced continuously throughout the year.

The curriculum is organized according to the chapters in the required textbook. The corresponding MLS objective numbers are on all worksheets and quizzes.

The curriculum was evaluated by ten teachers in Duval County who teach the General Math II course. A sample of the curriculum materials for chapters 6 and 7 of the General Math II course textbook were sent to mathematics teachers in four high schools in the county. They reviewed the curriculum materials and completed an evaluation checklist (See Appendix C).
Chapter 4

Results

Survey forms and a sample of the curriculum materials for textbook chapters 6 and 7 of the General Math II course were sent to mathematics teachers in four high schools in Duval County. Only materials relating to two chapters of the textbook were sent so as to make the feedback task manageable for the teachers. The survey results are summarized in Table 4.1.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Each worksheet, quiz, and test gives the Minimum Level Skill Objective number. Do you feel this is beneficial?</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>2. Would you use this curriculum for your General Math II course?</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>3. Do you like having worksheets and quizzes for each objective?</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>4. Do you like having cumulative tests?</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>5. Is there a sufficient number</td>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>
of exercises for each objective in this project?

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Is there a need for this material?</td>
<td>10</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>7. Do you have students who would benefit from this curriculum?</td>
<td>10</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>8. Would you use this curriculum in a mastery learning program?</td>
<td>10</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>9. Would you use this curriculum in a traditional teaching program?</td>
<td>10</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>10. Would you change any of the exercises?</td>
<td>0</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

The ten teachers who responded all indicated a need for this material and felt that their students would benefit from this curriculum. They all agreed that they would use this curriculum for their General Math II course and they liked the idea of having worksheets, quizzes and cumulative tests. They also agreed that having the Minimum Level Skill (MLS) objective number on the worksheets, quizzes, and tests was beneficial. It was felt that there were sufficient numbers of exercises for each objective and all responded that they would use the curriculum in either a mastery learning program or a traditional program. No one wanted to change any of the exercises.
It was suggested that the State objective number might also be included on the curriculum to show the student that this objective was required by Florida. One teacher said she would like someone to do this for all the courses that she teaches. Another comment indicated that having the MLS objective number on everything enabled teachers to be sure that all objectives had been covered. Another teacher said that providing worksheets and quizzes was most appropriate for this level of student. This same teacher said that he was currently using the curriculum and had experienced good results. It was suggested that a different method of evaluating the curriculum might be more beneficial. All survey results were favorable.
Chapter 5

Conclusions

The survey responses indicate a need for the curriculum prepared for this project. The students need the material to reinforce each Minimum Level Skill (MLS) objective. The teacher needs the material because the exercises in the required textbook are limited. There are also several MLS objectives that are not covered in the text. Therefore, the material may serve as another resource for the General Math II teacher in Duval County.

The format of the material and the inclusion of the MLS objective number on each activity appeared to be acceptable to the teachers surveyed.

This curriculum is designed to help the classroom teacher in the instruction of the MLS objectives for the General Math II course. It is also designed to help the students master the skills necessary to pass the MLS test that is presently required.
References


DeVries, D. L., & Edwards, K. J. (1973). Learning games and student teams: Their effects on classroom


instruction: How effective has it been in secondary and postsecondary schools? Mathematics Teacher, 69, 352-357.


Appendix A

Survey Form
Curriculum Evaluation

Duval County Minimum Level Skill Objectives for General Math II

Please circle your response.

Yes  No  1. Each worksheet, quiz, and test gives the Minimum Level Skill Objective number. Do you feel this is beneficial?

Yes  No  2. Would you use this curriculum for your General Math II course?

Yes  No  3. Do you like having worksheets and quizzes for each objective?

Yes  No  4. Do you like having cumulative tests?

Yes  No  5. Is there a sufficient number of exercises for each objective in this project?

Yes  No  6. Is there a need for this material?

Yes  No  7. Do you have students who would benefit from this curriculum?

Yes  No  8. Would you use this curriculum in a mastery learning program?

Yes  No  9. Would you use this curriculum in a traditional teaching program?

Yes  No  10. Would you change any of the exercises?

If yes, how? __________________________________________________________

_____________________________________________________________

Comments: __________________________________________________________

_____________________________________________________________

Thank you for your assistance in my Master's Project. Please return this form to me by February 1st.

Pamela W. Bean
Math Teacher
N. B. Forrest High School, #241
Appendix B

Course Outline
COURSE OUTLINE

GENERAL MATHEMATICS II

* Indicates Minimum Level Skills
& Indicates State Student Assessment Skills
E Indicates State Standard of Excellence
@ Indicates State Performance Standards

1.0 Whole Numbers
   1.1 Read/Write Large Numbers
   &* 1.2 Order Numbers
   &* 1.3 Round Numbers
   @ 1.4 Add (no more than four digits)
   @ 1.5 Subtract (no more than five digits)
   @ 1.6 Multiply
      1.6.1 3-digit numbers by 2-digit numbers
      & 1.6.2 3-digit numbers
      1.6.3 Multiples of 10, 100, 1000
   @ 1.7 Divide
      1.7.1 3-digit numbers by 1-digit numbers
      1.7.2 3-digit numbers by 2-digit multiples of 10
      1.7.3 5-digit numbers by 1-digit numbers
      & 1.7.4 5-digit numbers by 2-digit numbers
      1.7.5 5-digit numbers by multiples of 10, 100, 1000

2.0 Word Problems/Whole Numbers
   2.1 Select Number Sentences for Word Problems
   2.2 Translate Word Problems to Number Sentences
   & 2.3 Determine Whether Sufficient Information Exists
   @&* 2.4 Estimate Solutions: Rounding
   @&* 2.5 Estimate Solutions: Addition
   @&* 2.6 Estimate Solutions: Subtraction
   @& 2.7 Estimate Solutions: Multiplication
   @& 2.8 Estimate Solutions: Division
   &* 2.9 Find Solutions: One or Two-step Problems
   @&* 2.10 Find Averages

3.0 Decimals
   3.1 Read/Write Decimals
   3.2 Order Decimals
3.3 Round Decimals to Whole Numbers
&* 3.4 Round Decimals to Designated Places
@ 3.5 Add (no more than two decimal places)
@ 3.6 Subtract (no more than two decimal places)
@ 3.7 Multiply
   3.7.1 Whole numbers, decimals
   & 3.7.2 Two decimals
   3.7.3 Decimals by 10, 100, 1000
@ 3.8 Divide
   3.8.1 Decimals by whole numbers
   & 3.8.2 Decimals
   3.8.3 Decimals by 10, 100, 1000

4.0 Word Problems/Decimals
  4.1 Translate Word Problems to Numbers Sentences
  & 4.2 Find Solutions to Problems

5.0 Factors/Multiples
  5.1 Find Factors
  5.2 Find Multiples
  5.3 Distinguish between Primes, Composites
  5.4 Find GCF
  5.5 Find LCM

6.0 Fractions
  6.1 Read and Write Fractions
  6.2 Write Equivalent Fractions
  & 6.3 Improper Fractions to Mixed Numbers
  & 6.4 Mixed Numbers to Improper Fractions
  & 6.5 Round Mixed Numbers to Whole Numbers
  & 6.6 Multiply Fractions
    6.6.1 Proper
    6.6.2 Improper
  @ 6.7 Multiply Fractions, Whole Numbers
  @& 6.8 Multiply Whole Numbers, Mixed Numbers
  @ 6.9 Multiply Mixed Numbers
  @ 6.10 Divide Whole Numbers by Fractions
  @ 6.11 Divide Fractions
  @ 6.12 Divide Mixed Numbers
  6.13 Write Equivalent Fractions
    6.13.1 Identify LCD
    6.13.2 Write with LCD
  6.14 Order Fractions, Mixed Numbers
  @ 6.15 Add Proper Fractions
  @& 6.16 Add Mixed Numbers
  @ 6.17 Subtract Proper Fractions
6.18 Subtract Whole Numbers, Mixed Numbers
6.19 Subtract Mixed Numbers
6.20 Identify Decimals Equivalent to Proper Fractions

7.0 Word Problems/Fractions
  7.1 Translate Word Problems to Number Sentences
  7.2 Addition/Subtraction: Like Denominators
  7.3 Addition/Subtraction: Unlike denominators
  7.4 Multiplication: Proper Fractions

8.0 Ratios/Proportions/Percents
  8.1 Equal Ratios
  8.2 Find Cross-products
  8.3 Ratios and Proportions
  8.4 Find Missing Terms, Proportions
  8.5 Fractions to Percents
  8.6 Percents to Fractions
  8.7 Decimals to Percents
  8.8 Percents to Decimals
  8.9 Percents to Decimals or Fractions
  8.10 Find Percents
    8.10.1 Whole numbers
    8.10.2 Decimals
  8.11 Find What Percent One Number is of Another
  8.12 Find a Number When a Percent of it is Known

9.0 Word Problems/Percents
  9.1 Translate Word Problems to Number Sentences
  9.2 Find Solutions to Word Problems

10.0 Values of Coins/Bills
  10.1 Read and Write Money Values
  10.2 Determine Equivalent Amounts of Money

11.0 Word Problems/Money
  11.1 Determine Change after Purchase
  11.2 Solve Problems, Comparison Shopping
  11.3 Solve Problems, Simple Interest
  11.4 Solve Problems, Rate of Discount
  11.5 Solve Problems, Sales Tax
  11.6 Solve Problems, Wages

12.0 Measurement
  12.1 Elapsed Time Between Events
  12.2 Measure Lengths/Widths/Heights
12.3 Estimate Lengths, Widths, Heights
12.4 Determine Capacity (Milliliters)
12.5 Estimate Capacity
12.6 Estimate Mass/Weight
12.7 Identify Temperatures

13.0 Word Problems/Measurement
13.1 Convert Units of Length
  13.1.1 Customary
  13.1.2 Metric
13.2 Solve Problems: Customary, Metric Length
13.3 Solve Problems: Perimeters of Rectangular Regions
  13.3.1 Customary
  13.3.2 Metric
13.4 Solve Problems: Perimeters of Simple Geometric Figures
13.5 Convert Units of Area
  13.5.1 Customary
  13.5.2 Metric
13.6 Solve Problems: Areas of Rectangular Regions
  13.6.1 Customary
  13.6.2 Metric
13.7 Solve Problems: Areas Enclosed by Simple Geometric Figures
13.8 Convert Units of Capacity
  13.8.1 Customary
  13.8.2 Metric
13.9 Solve Problems: Customary, Metric Capacity
13.10 Convert Units of Weight/Mass
  13.10.1 Customary
  13.10.2 Metric
13.11 Solve Problems: Customary, Metric Weight/Mass
13.12 Solve Problems: Volume
  13.12.1 Rectangular Solid
  13.12.2 Right Circular Cylinder

14.0 Geometric Figures/Shapes
14.1 Parallel Lines
  14.1.1 Recognize
  14.1.2 Define
14.2 Perpendicular
  14.2.1 Recognize
  14.2.2 Define
14.3 Circles/Squares/Rectangles/Triangles
14.4 Cubes/Cylinders/Cones/Spheres
@14.5 Pythagorean Theorem
  14.5.1 Find third side in a right triangle
  14.5.2 Determine a right triangle
14.6 Similar Triangles
  14.6.1 Recognize
  14.6.2 Define

15.0 Graphs/Tables/Maps
  @&*15.1 Read Graphs/Tables
    15.1.1 Line Graphs
    15.1.2 Circle Graphs
    15.1.3 Tables
  *15.2 Determine Solutions from Scale Drawings
  &*15.3 Find Distance on Highway Maps
@15.4 Construct Graphs
  15.4.1 Line
  15.4.2 Bar
  15.4.3 Circle

16.0 Elements of Algebra
  16.1 Perform Operations with Integers
  16.2 Evaluate Algebraic Expression
@16.3 Solve Linear Equations

@17.0 Statistics/Probability
  17.1 Solve Problems/Statistics
    17.1.1 Mean
    17.1.2 Median
    17.1.3 Mode
  17.2 Solve Problem/Sample Space/Probability

@18.0 Geometric Construction
  18.1 Bisect Angle
  18.2 Construct Perpendicular Bisector
  18.3 Construct a Perpendicular to a Line Through a Point on the Line
  18.4 Construct a Perpendicular to a Line Through a Point Not on the Line
  18.5 Copy Angle
Appendix C

Curriculum
Introduction

This curriculum has been developed to assist in the teaching of the Duval County Minimum Level Skill (MLS) Objectives for the General Math II course. It was designed to be used by classroom teachers as supplementary material to the required text. The curriculum contains worksheets that can be integrated with the county-adopted textbook or used alone on an individual or group basis. The quizzes can be used at any time to check students' progress. If the students' progress is unacceptable, there is a second worksheet and quiz for each MLS objective. The curriculum also correlates to the chapters in Stein's Refresher Mathematics textbook. The tests were designed as end-of-chapter tests. Each test contains problems from previous chapters. Each worksheet and quiz has the MLS objective number on it for easy reference.
Chapter 1
Rounding Numbers
MLS: 1.3

Round each number to the nearest ten.
1. 39 2. 52 3. 65 4. 473
5. 655 6. 207 7. 9038 8. 4262

Round each number to the nearest hundred.
9. 389 10. 428 11. 944
12. 8553 13. 4265 14. 8537
15. 25,874 16. 59,797 17. 9513

Round each number to the nearest thousand.
18. 7301 19. 2753 20. 3400
21. 2500 22. 6100 23. 9600
24. 13,638 25. 84,507 26. 36,312

Round each number to the nearest ten thousand.
27. 36,312 28. 83,459 29. 40,573
30. 71,900 31. 97,326 32. 52,002
33. 26,715 34. 73,128 35. 60,458

Round each number to the nearest hundred thousand.
36. 498,022 37. 312,856 38. 789,623
39. 573,322 40. 199,474 41. 877,344

Round each number to the nearest million.
42. 5,498,022 43. 26,676,311 44. 217,683,325
45. 13,099,456 46. 49,654,122 47. 934,546,734
Rounding Numbers
MLS: 1.3

Round each number to the nearest ten.
1. 28  2. 63  3. 55  4. 362
5. 545 6. 108 7. 8047 8. 3141

Round each number to the nearest hundred.
9. 467 10. 319 11. 853
12. 7664 13. 3154 14. 9648
15. 14,763 16. 60,808 17. 8402

Round each number to the nearest thousand.
18. 8402 19. 1642 20. 2300
21. 3611 22. 5099 23. 8500
24. 12,527 25. 73,406 26. 25,203

Round each number to the nearest ten thousand.
27. 25,201 28. 72,348 29. 39,402
30. 60,900 31. 86,215 32. 41,001
33. 15,604 34. 62,019 35. 59,349

Round each number to the nearest hundred thousand.
36. 215,604 37. 423,967 38. 890,734
39. 653,322 40. 187,474 41. 966,344

Round each number to the nearest million.
42. 6,398,022 43. 17,576,311 44. 328,783,325
45. 25,299,456 46. 58,454,122 47. 845,046,734
General Math II
Answer Sheet

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________
8. ____________________

9. ____________________
10. ____________
11. ____________
12. ____________
13. ____________
14. ____________
15. ____________
16. ____________

17. ____________
18. ____________
19. ____________
20. ____________
21. ____________
22. ____________
23. ____________
24. ____________

25. ____________
26. ____________
27. ____________
28. ____________
29. ____________
30. ____________
31. ____________
32. ____________

33. ____________
34. ____________
35. ____________
36. ____________
37. ____________
38. ____________
39. ____________
40. ____________

41. ____________
42. ____________
43. ____________
44. ____________
45. ____________
46. ____________
47. ____________
48. ____________

49. ____________
50. ____________

Name ____________________
Date ____________________
General Math II
Quiz #1

Rounding Numbers
MLS: 1.3

Round to the nearest:

Ten:
1. 49 2. 713

Hundred:
3. 3,874 4. 14,943

Thousand:
5. 317,941 6. 725,407

Ten Thousand:
7. 556,314 8. 122,879

Million:
9. 9,437,021 10. 23,842,317

Name ____________________
Date ____________________
Rounding Numbers
MLS: 1.3

Round to the nearest:

Ten:
1. 68  
2. 824

1.  
2.  

Hundred:
3. 4,567  
4. 3,819

3.  
4.  

Thousand:
5. 428,732  
6. 813,495

5.  
6.  

Ten Thousand:
7. 678,417  
8. 833,935

7.  
8.  

Million:
9. 7,506,328  
10. 34,039,817

9.  
10.  
General Math II
Quiz #1

Ordering & Rounding Numbers
MLS: 1.2 & 1.3

1. Write, using commas, the numeral that names thirty-six thousand, two hundred fifty-six.
   1. ________________

2. Write, using commas, the numeral that names seven million, eight hundred twenty-one thousand, seven hundred forty-three.
   2. ________________

3. Write in words: 416,076.
   ____________________

4. Write in words: 4,756,132.
   ____________________

5. Arrange the following numbers from largest to smallest:
   683,679   683,976   683,967   683,697
   ____________________

6. Arrange the following numbers from smallest to largest:
   6,763,218   6,736,128   6,763,281   6,673,128
   ____________________

Round each of the following numbers to the nearest:

7. ten: 7,798   7. ________________
8. hundred: 1,896   8. ________________
9. thousand: 732,516   9. ________________
10. ten thousand: 24,119  10. ________________
11. hundred thousand: 539,455,322  11. ________________
12. million: 17,438,679  12. ________________
1. Write, using commas, the numeral that names four hundred eighty-seven thousand, forty-two.

2. Write, using commas, the numeral that names sixty-three million, five hundred fifty-two thousand, six hundred nine.

3. Write in words: 581,254.

4. Write in words: 43,032,198.

5. Arrange the following numbers from largest to smallest:
   834,619  834,916  834,169  834,196

6. Arrange the following numbers from smallest to largest:
   1,769,185  1,679,185  1,796,185  1,697,185

7. Round each of the following numbers to the nearest:
   7. ten: 1,654
   8. hundred: 3,449
   9. thousand: 56,211
   10. ten thousand: 44,298
   11. hundred thousand: 539,455
   12. million: 71,438,679
1. There are 752 boys and 651 girls at Blaine Elementary School. Estimate to the nearest hundred, how many students attend the school.

2. Ajax warehouse received 132 cases of pens. Each case cost $7. Estimate by rounding to the nearest ten, the total cost of the pens.

3. The Forestry Club planted 381 shrubs. If there are 14 club members, estimate by rounding to the nearest ten, the number of trees each member planted.

4. One standard refrigerator with a freezer uses 1,137 kilowatt hours of electricity a year. A frost-free model uses 1,829 kilowatt hours. Estimate by rounding to the nearest hundred, how much more electricity the frost-free model uses.

5. The Crescent Citrus Grove has 234 rows of orange trees with each row containing 87 trees. Estimate by rounding to the nearest hundred, the number of trees there are in the grove.

6. During the arts festival, 3,896 people attended on Friday, 5,250 on Saturday, and 5,500 on Sunday. Estimate by rounding to the nearest thousand, the number of people who attended all together.

7. A crate contains 157 eggs. Estimate by rounding to the nearest ten, the number of egg cartons there are in the crate if each egg carton contains 12 eggs.

8. The Lairds are planning to buy a car which costs $8,895. So far they have saved $4,245 toward this purchase and they plan to borrow the rest. Estimate by rounding to the nearest thousand, the amount of money they need to borrow.
9. Susan bought a purse for $49, a shirt for $33, a skirt for $45, and a pair of shoes for $27. Estimate by rounding to the nearest ten, how much she spent altogether.

10. Forrest has 1,832 students, Ed White has 1,756, and Paxon has 893. Estimate to the nearest thousand, how many students attend the three schools.
General Math II  
Worksheet #2

Word Problems  
MLS: 2.4, 2.5, 2.6, 2.9, & 2.10

1. There were 1,326 people at the varsity football game. If 93 people left at halftime, estimate by rounding to the nearest ten, the number of people remaining.

2. Every day during the last year Ted jogged 825 meters. Estimate by rounding to the nearest hundred, how far Ted jogged last year (365 days).

3. The social studies classes are going on a field trip by bus. Each bus holds 45 passengers. If 554 people are going, estimate by rounding to the nearest ten, the number of busses that should be chartered.

4. A batch of rolls takes 875 milliliters of unbleached flour, and a recipe for bread needs 457 milliliters of unbleached flour and 430 milliliters of whole wheat flour. Estimate by rounding to the nearest hundred milliliters the amount of unbleached flour needed to make both.

5. The Martins average 88 kilometers per hour when driving on the interstate. Estimate by rounding to the nearest ten kilometers, how long it will take them to drive 543 kilometers.

6. The distance around the earth is 40,075 kilometers. The distance around the moon is 10,927 kilometers. Estimate by rounding to the nearest thousand kilometers, the difference between the two distances.

7. Jane spent $17 for a fishing rod, $11 for a reel, and $6 for assorted tackle. Estimate by rounding to the nearest $10 how much she spent altogether.

8. Estimate by rounding to the nearest ten, the cost of providing each of 32 classrooms with a television set priced at $189.
General Math II
Chapter 1 Test A
Name __________________
Date __________________

MLS: 1.2 & 1.3

Write each of the following numerals in words:

1. 73,468 ________________________________

2. 7,021,743 ________________________________

Write the number for each of the following:

3. Four hundred five thousand eighty-four

4. Five hundred fourteen thousand one hundred seventy-five

5. Seven million fifty-five thousand nine hundred twenty-one

Round to the nearest:

Ten:
6. 485 7. 13,513 6. __________
7. __________

Hundred:
8. 677 9. 42,732 8. __________
9. __________

Thousand:
10. 21,479 11. 56,781 10. __________
11. __________

Ten thousand:
12. 365,174 13. 474,015 12. __________
13. __________
Hundred thousand:
14. 780,243
15. 946,707

Million:
16. 5,409,783
17. 84,909,146

18. Arrange the following numbers from largest to smallest:
472,568  472,658  472,586  472,685

19. Arrange the following numbers from smallest to largest:
8,985,439  8,958,439  8,985,349  8,958,349

Do the indicated operations:
20. 637 + 3,985 + 14,189
21. 7,863 + 437 + 13,921
22. 50,381 - 7,064
23. 103,841 - 69,497
24. 36 x 84
25. 804 x 700
26. $72,976 \div 8$
27. $234 \div 12$
28. $20,776 \div 212$

29. What is the total number of students if there are 944 seniors, 637 juniors, and 791 sophomores?

30. The enrollment at Forrest increased from 1,698 to 1,862. What was the amount of increase?

31. If donuts sell for $.16 each, how much would a dozen donuts cost?
32. Wayne bought 8 gallons of gas for $7.52. What was the price per gallon?

33. What was the average number of points scored per game when the football team scored 13 points, 20 points, 19 points, 23 points, and 28 points in the first five games?

34. There were 478,312 people in Jacksonville last year and 527,498 people this year. Estimate by rounding to the nearest thousand how many more people were in Jacksonville this year than last year.
Write each of the following numerals in words:

1. 86,063 ____________________________

2. 10,719,651 ____________________________

Write the number for each of the following:

3. Nine hundred eight thousand seventeen ____________________________

4. Three hundred twenty-two thousand seven hundred sixty-nine ____________________________

5. Four million seventy-five thousand eight hundred thirty-six ____________________________

Round to the nearest:

Ten:

6. 571 7. 24,669 6. __________________

Hundred:

8. 788 9. 53,843 8. __________________

Thousand:

10. 32,560 11. 45,383 10. __________________

Ten thousand:

12. 476,285 13. 583,921 12. __________________
Hundred thousand:
14. 890,352  
15. 547,818  

Million:
16. 6,508,894  
17. 94,409,256  

18. Arrange the following numbers from largest to smallest:
361,457  361,547  361,475  361,574

19. Arrange the following numbers from smallest to largest:
4,465,721  4,564,721  4,465,271  4,564,712

Do the indicated operations:
20. 712 + 4,837 + 21,212
21. 8,954 + 548 + 14,847
22. 61,473 - 8,095
23. 207,956 - 78,587
24. 47 x 93
25. 903 x 800
26. 81,729 ÷ 9
27. 3,024 ÷ 14
28. 12,087 ÷ 153

29. What is the total number of high school students on the Westside if Forrest has 1,793 students, Ed White has 1,654 students, Lee has 895 students, and Paxon has 691 students?

30. The number of cars in Jacksonville increased from 4,093,718 to 5,116,781. What was the amount of increase?
31. If candy bars sell for $.45 a piece, how much would a dozen candy bars cost?

32. Ted bought 5 pair of socks for $10.95. What was the cost per pair?

33. What was the average number of runs scored per inning if the baseball team scored 2 runs, 0 runs, 4 runs, 3 runs, 1 run, 3 runs, and 1 run per inning?

34. There are 759 sophomores, 563 juniors, and 478 seniors at Forrest High School. Estimate to the nearest ten how many students attend school at Forrest.
Chapter 2
General Math II
Worksheet #1

Rounding Decimals
MLS: 3.4

Name __________________________
Date __________________________

Round each number to the nearest place as indicated:

<table>
<thead>
<tr>
<th>Tenth</th>
<th>Hundredth</th>
<th>Thousandth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 12.684</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>2. 5.271</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>3. 13.882</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>4. 17.5039</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>5. 47.973</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>6. 126.1293</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>7. 320.709</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>8. 97.005</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>9. 100.084</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>10. 10.002</td>
<td>_______</td>
<td>_______</td>
</tr>
</tbody>
</table>

Round each to the nearest whole number:

| 11. 12.684 | _______ |
| 12. 5.271 | _______ |
| 13. 13.882 | _______ |
| 14. 17.5039 | _______ |
| 15. 47.973 | _______ |

Round each number to the nearest place as indicated:

<table>
<thead>
<tr>
<th>cent</th>
<th>dollar</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. $6.035</td>
<td>_______</td>
</tr>
<tr>
<td>17. $15.183</td>
<td>_______</td>
</tr>
<tr>
<td>18. $26.852</td>
<td>_______</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>19.</td>
<td>$98.789</td>
</tr>
<tr>
<td>20.</td>
<td>$124.374</td>
</tr>
</tbody>
</table>
### General Math II
Worksheet #2

Rounding Decimals
MLS: 3.4

#### Round each number to the nearest place as indicated:

<table>
<thead>
<tr>
<th></th>
<th>Tenth</th>
<th>Hundredth</th>
<th>Thousandth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>23.755</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>6.382</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>31.633</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>81.6048</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>53.899</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>214.3219</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>431.806</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>85.008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>202.095</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>20.003</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Round each to the nearest whole number:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>23.755</td>
</tr>
<tr>
<td>12</td>
<td>6.382</td>
</tr>
<tr>
<td>13</td>
<td>31.633</td>
</tr>
<tr>
<td>14</td>
<td>81.6048</td>
</tr>
<tr>
<td>15</td>
<td>53.899</td>
</tr>
</tbody>
</table>

#### Round each number to the nearest place as indicated:

<table>
<thead>
<tr>
<th></th>
<th>cent</th>
<th>dollar</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>$7.049</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>$21.563</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>$34.963</td>
<td></td>
</tr>
</tbody>
</table>
19. $89.879
20. $214.465
Rounding Decimals
MLS: 3.4

Round to the nearest:

<table>
<thead>
<tr>
<th>Tenth:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 4.8369</td>
<td>1.</td>
</tr>
<tr>
<td>2. 15.4532</td>
<td>2.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hundredth:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3. 5.9217</td>
<td>3.</td>
</tr>
<tr>
<td>4. 7.0359</td>
<td>4.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thousandth:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5. 10.4609</td>
<td>5.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cent:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7. $13.4853</td>
<td>7.</td>
</tr>
<tr>
<td>8. $24.5349</td>
<td>8.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Whole Number:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9. 36.781</td>
<td>9.</td>
</tr>
<tr>
<td>10. 52.199</td>
<td>10.</td>
</tr>
</tbody>
</table>
General Math II
Quiz #2

Rounding Decimals
MLS: 3.4

Round to the nearest:

Tenth:
1. 5.7477 2. 22.3844

Hundredth:
3. 6.8328 4. 3.0467

Thousandth:
5. 11.2719 6. 9.1302

Cent:
7. $24.5932 8. $11.8166

Whole Number:
9. 45.532 10. 63.299
Match the following:

1. .6  A. six-thousandths
2. .415  B. ninety-three thousandths
3. .93  C. four hundred fifteen thousandths
4. .960  D. ninety-six hundredths
5. .006  E. six-tenths
6. .06  F. ninety-three hundredths
7. .96  G. six-hundredths
8. .930  H. nine hundred sixty thousandths

Write the following in order from largest to smallest:

9. 3.7  3.74  3.47
10. 234.21  243.12  243.21

Write the following in order from smallest to largest:

11. 888.8  887.9  878.9
12. 567.54  576.54  576.45

Round the following decimals to the designated place:

13. 39.762 to the nearest tenth  
14. 0.596 to the nearest hundredth  
15. 2.68 to the nearest whole number  
16. 5.405 to the nearest hundredth  
17. 28.041 to the nearest tenth  
18. 43.499 to the nearest whole number  
19. 16.387 to the nearest tenth  
20. 88.591 to the nearest hundredth
Match the following:

1. .023  A. twenty-three hundredths  1. _____________
2. .702  B. eighty thousandths  2. _______________
3. .004  C. four hundredths  3. _______________
4. .23   D. seven hundred two thousandths  4. _______________
5. .80   E. twenty-three thousandths  5. _______________
6. .72   F. seventy-two hundredths  6. _______________
7. .080  G. four thousandths  7. _______________
8. .40   H. eighty hundredths  8. _______________

Write the following in order from largest to smallest:

9. 7.23  7.32  7.3  9. _______________
10. 2.40  0.42  2.04  10. _______________

Write the following in order from smallest to largest:

11. 3.09  3.90  3.39  11. _______________
12. 1000  999.9  999.99  12. _______________

Round the following decimals to the designated place:

13. 0.35 to the nearest tenth  13. ______________
14. 7.349 to the nearest hundredth  14. ______________
15. 18.041 to the nearest tenth  15. ______________
16. 5.87 to the nearest whole number  16. ______________
17. 99.951 to the nearest tenth  17. ______________
18. 39.49 to the nearest whole number  18. ______________
19. 21.378 to the nearest hundredth  19. ______________
20. 72.184 to the nearest hundredth  20. ______________
Write the numeral naming each:

1. Three hundred five thousand seventy-nine
2. Eight million twenty thousand six hundred eleven

Round 34,918 to the nearest:

3. ten
4. hundred
5. thousand

Round 178,566,303 to the nearest:

6. ten thousand
7. million

Round $19.5437 to the nearest:

8. dollar
9. cent

Do the indicated operation:

10. \[ \begin{array}{c}
      637 \\
      3,985 \\
      + 4,189 \\
   \end{array} \]
11. \[ \begin{array}{c}
      51,381 \\
      - 7,064 \\
   \end{array} \]
12. \[ \begin{array}{c}
      306 \\
      \times 14 \\
   \end{array} \]
13. \[ \begin{array}{c}
      12/234 \\
   \end{array} \]

14. The enrollment at Forrest increased from 1,743 to 1,922. What was the amount of increase?

15. If donuts sell for $.20 each, how much would a dozen donuts cost?
Write each of the following as decimals:

16. forty-three hundredths
17. eight thousandths
18. twenty-seven and five tenths

Write in words:

19. .014
20. 7.48

Round:

21. .55 to the nearest tenth
22. 16.4936 to the nearest hundredth
23. 58.4729 to the nearest thousandth

Do the indicated operation:

24. 2.7 + .45 + 19
25. .739 - .2
26. 21 - .19
27. .019 x .04
28. $6 \div $.08
29. 10 x .94
30. 294 \div 100

31. Which is greater? .37 or .4
32. Which is less? .732 or .8

33. Find the cost of 15 cases of milk at $45.84 per case.
Write the numeral naming each:

1. Two million seven hundred thirteen thousand four hundred twenty-five
   1. ______________________

2. Nine hundred seven thousand eight hundred eighty-nine
   2. ______________________

Round 4,603,517 to the nearest:

3. ten
   3. ______________________

4. hundred
   4. ______________________

5. thousand
   5. ______________________

Round 4,603,517 to the nearest:

6. ten thousand
   6. ______________________

7. million
   7. ______________________

Round $5.4937 to the nearest:

8. dollar
   8. ______________________

9. cent
   9. ______________________

Do the indicated operation:

10. \[ \frac{789}{7,023} + \frac{5,256}{25} \]
    10. ______________________

11. \[ \frac{47,209}{-8,193} \]
    11. ______________________

12. \[ \frac{407}{25} \]
    12. ______________________

13. \[ \frac{24}{7,824} \]
    13. ______________________

14. Lance scored a 96 on 18 holes of golf. What was his average score per hole (round to the nearest whole number)?
    14. ______________________

15. Casey bought a half dozen apples for $0.78. What was the cost of each apple?
    15. ______________________

OVER
Write each of the following as decimals:

16. Thirteen thousandths
17. Eighty-seven hundredths
18. Eleven and seven tenths

Write in words:

19. .8
20. 9.31

Round:

21. .64 to the nearest tenth
22. 47.0363 to the nearest hundredth
23. 64.5618 to the nearest thousandth

Do the indicated operation:

24. 11.7 + 21.9 + 22
25. 4.39 - .18
26. 34 - .21
27. .09 x .7
28. $9 ÷ $.06
29. 10 x .86
30. 75.2 ÷ 1,000
31. Which is greater? .5 or .49
32. Which is less? .9 or .933
33. Find the cost of 7 cases of coke at $5.99 per case.
Chapter 3
Changing Decimals to Fractions

Unless directed otherwise when converting a decimal to an equivalent fraction, always reduce the fraction to its lowest form.

**EXAMPLE:**

\[ \frac{6}{10} = \frac{3}{5} \quad \frac{25}{100} = \frac{3}{4} \quad \frac{200}{1000} = \frac{1}{5} \]

Change the following decimals to equivalent fractions.

\[ .43 \quad .7 \quad .08 \quad .0080 \]
\[ .250 \quad .6 \quad .482 \quad .80 \]
\[ .48 \quad .54 \quad .125 \quad .070 \]
\[ .5 \quad .8 \quad .08 \quad .165 \]
\[ .444 \quad 23.625 \quad .006 \quad .08 \]
\[ 7.2 \quad .006 \quad .600 \quad 1.24 \]
\[ 1.375 \quad .24 \quad .78 \quad .48 \]

Changing Fractions to Decimals

Change the following fractions (that have denominators which are factors of some power of ten) to equivalent decimals.

\[ \frac{2}{5} = \frac{3}{5} = \frac{9}{10} = \frac{13}{20} = \frac{14}{20} = \frac{18}{20} = \frac{10}{20} = \frac{20}{100} = \frac{31}{100} = \frac{12}{20} = \frac{25}{100} = \frac{5}{10} = \frac{5}{100} = \frac{10}{100} = \frac{20}{20} = \frac{79}{100} = \frac{99}{100} \]

Factor Tree

\[ \begin{tikzpicture}
  \node {10} child {node {10}} child {node {5}};
\end{tikzpicture} \]

COPYRIGHT © — MCDONALD PUBLISHING CO.
Identify decimals equivalent to proper fractions.
MLS: 6.20

Write the following fractions as decimals to the nearest hundredth:

1. \frac{3}{10} \quad 2. \quad 0.25 \\
3. \frac{67}{100} \quad 4. \quad \frac{1}{4}
5. \frac{11}{20} \quad 6. \quad \frac{3}{16}
7. \frac{7}{12} \quad 8. \quad \frac{157}{100}
9. \frac{44}{50} \quad 10. \quad \frac{11}{12}
11. \frac{2}{3} \quad 12. \quad \frac{3}{8}
13. \frac{21}{25} \quad 14. \quad \frac{49}{100}
15. \frac{100}{100} \quad 16. \quad \frac{3}{7}
17. \frac{35}{40} \quad 18. \quad \frac{48}{64}
19. \frac{7}{9} \quad 20. \quad \frac{8}{15}

Write the following decimals as common fractions or mixed numbers in lowest terms:

21. \quad 0.7 \quad 22. \quad 0.4 \\
23. \quad 0.09 \quad 24. \quad 0.68 \\
25. \quad 0.64 \frac{1}{2} \quad 26. \quad 4.8 \\
27. \quad 0.025 \quad 28. \quad 0.775 \\
29. \quad 0.0015 \quad 30. \quad 0.0564 \\
31. \quad 0.825 \quad 32. \quad 0.75 \\
33. \quad 2.34 \quad 34. \quad 15.755
1. Each day Mr. Ward drives $8 \frac{2}{5}$ miles to work round trip. How many miles does he drive in five days?

2. Grandma Rose bought a turkey that weighed $12 \frac{3}{4}$ pounds. After she stuffed it, the turkey weighed $14 \frac{1}{3}$ pounds. How much stuffing was in the turkey?

3. Lena wanted to put 4 shelves in her room. Each shelf would be $3 \frac{7}{8}$ feet long. How much total shelving would Lena have in her room?

4. Mary painted $2/5$ of the fence and Nancy painted $1/3$ of the fence. How much of the fence has been painted?

5. If a board $15 \frac{1}{4}$ feet long was cut into 6 pieces of equal length, what would the length of each piece be? Disregard waste.

6. Mark spends $2/5$ of his salary on car expenses and Ted spends $3/8$ of his salary on car expenses. What fraction more does Mark spend than Ted?

7. Kim decided to increase her deductions for savings from $1/6$ of her salary to $1/5$ of her salary. As a fraction, how much more is being deducted?

8. A sewing class is making costumes for the school play. If each costume requires $4 \frac{2}{5}$ yards of material, how many yards are needed to make 25 costumes?

9. Paul wishes to buy a stereo system priced at $480. He pays $1/5$ of the price in cash and charges the rest. How much did he pay in cash?

10. Three months ago Ilene weighed $134 \frac{3}{4}$ pounds. Now she weighs $123 \frac{1}{4}$ pounds. How many pounds did she lose?
1. Lance has mowed $\frac{1}{4}$ of the yard and Jim has mowed $\frac{1}{3}$ of the yard. How much of the yard has been mowed?

2. At Thanksgiving, Lisa weighed 116 $\frac{3}{4}$ pounds. After Christmas she weighed 121 $\frac{1}{4}$ pounds. How much weight did she gain?

3. The running time of a train from Chicago to San Francisco was changed to 49 $\frac{1}{3}$ hours. If this schedule saves 13 $\frac{3}{4}$ hours, how long did the trip take before the change was made?

4. A plumber in installing water pipes, used pieces measuring 5 $\frac{3}{8}$ feet, 3 $\frac{1}{8}$ feet, and 1 $\frac{5}{8}$ feet. If they were cut from a 15 foot length of pipe, how many feet of pipe remained? Disregard waste.

5. How much wood is needed to make 15 shelves each 6 $\frac{2}{3}$ feet long?

6. If each costume for the school show requires 3 $\frac{1}{3}$ yards of material, how many costumes can be made from a 30 yard bolt of material?

7. Mr. Kahn needed 2 $\frac{1}{4}$ cups of flour to make a plain cake and 1 $\frac{1}{2}$ cups for a pineapple sponge cake. Find the total amount of flour he needed.

8. A merchant sold 8 $\frac{3}{8}$ yards of cloth to a customer. If it was cut from a bolt that contained 21 $\frac{2}{3}$ yards, what length remained on the bolt?

9. A house worth $31,500 is assessed at $\frac{2}{3}$ of its value. What is the assessed value of the house?

10. A bus is scheduled to go a distance of 87 $\frac{1}{2}$ miles in 2 $\frac{1}{2}$ hours. What average speed must be maintained to arrive on schedule?
Express in lowest terms.
1. $\frac{4}{24}$
2. $\frac{15}{45}$
3. $\frac{16}{64}$
4. $\frac{40}{60}$
5. $\frac{18}{36}$
6. $\frac{250}{1000}$

Rewrite each as a whole number or a mixed number.
7. $\frac{18}{3}$
8. $\frac{36}{9}$
9. $\frac{41}{6}$
10. $\frac{34}{7}$

Simplify.
11. $6 \frac{4}{4}$
12. $12 \frac{32}{4}$
13. $6 \frac{21}{24}$
14. $7 \frac{8}{6}$

Express as equivalent fractions having denominators as specified.
15. $\frac{1}{6} = \frac{?}{42}$
16. $\frac{3}{8} = \frac{?}{40}$
17. $\frac{9}{32} = \frac{?}{96}$
18. $\frac{7}{9}$ in 36ths

Reduce each to lowest terms and then tell whether they are equivalent fractions.
19. $\frac{6}{16}$ and $\frac{15}{40}$
20. $\frac{28}{35}$ and $\frac{35}{42}$
21. $\frac{21}{27}$ and $\frac{24}{33}$

Change each pair to equivalent fractions with common denominators and tell which fraction is greater.
22. $\frac{2}{3}$ or $\frac{3}{4}$
23. $\frac{4}{5}$ or $\frac{3}{7}$
24. $\frac{6}{7}$ or $\frac{8}{9}$

Round to the nearest whole number.
25. $2 \frac{7}{12}$
26. $6 \frac{2}{5}$
27. $17 \frac{3}{4}$
28. $23 \frac{3}{7}$
Round to the nearest cent.
29. $6.82 4/9  
30. $13.45 8/11  
31. $31.57 5/8  
32. $48.13 1/3  

Change each fraction to equivalent fractions with a common denominator and then arrange in size (greatest first):
33. 1/2, 1/5, and 1/3  
34. 5/8, 2/3, and 3/5  

ADD - Reduce answers to lowest terms.
35. 7/8 + 5/6  
36. 12 2/3 + 5 1/4  
37. 15 2/3 + 9 5/6  

SUBTRACT - Reduce answers to lowest terms.
38. 7/8 - 1/5  
39. 6 - 2 3/4  
40. 9 1/3 - 3 3/4  

MULTIPLY - Reduce answers to lowest terms.
41. 11/24 x 24  
42. 3 1/3 x 3/5  
43. 9/16 x 1 1/3  
44. 2 2/3 x 3 3/8  
45. 1/5 of $285  
46. 3/8 of $2.58  

DIVIDE - Reduce answers to lowest terms.
47. 2/5 ÷ 5/8  
48. 7/8 ÷ 3  
49. 2 1/2 ÷ 3/4  
50. 8 ÷ 2 4/5  
51. 2 3/16 ÷ 1 1/4  
52. 2/16 ÷ 3/8  

53. Ava has 1 1/2 sacks of flour. Each sack weighs 5 pounds. How many pounds of flour does Ava have?  

54. Ralph had 2 1/2 pounds of candy. He wanted to share it equally among him and his three friends. How much of a pound of candy would each boy receive?
1. Write 5,723,019 in words.

2. Round 52,783,556 to the nearest hundred thousand.

3. 

   \[
   \begin{array}{c}
   62,094 \\
   8,437 \\
   59,285 \\
   14,077 \\
   + 70,282 \\
   \hline
   \end{array}
   \]

4. 

   \[
   \begin{array}{c}
   940,037 \\
   \underline{- 677,154} \\
   \hline
   \end{array}
   \]

5. \(6,408 \times 32\)

6. \(14/112\)

7. Round $45.938 to the nearest cent.

8. \$.14 + $17.63 + $49

9. \$126 - $82.16

10. \(.04 \times .4\)

11. \(.25/7.5\)

Reduce to lowest terms.

12. \(49/63\)

13. \(36/48\)

14. \(55/35\)

15. \(120/260\)

Express each as an equivalent fraction having the denominator as specified.

16. \(2/9 = ?/54\)

17. \(3/10 = ?/80\)

18. \(4/7 = ?/28\)

19. \(4/15 = ?/45\)

20. Express 3/8 in 64ths.

Do the indicated operation. Reduce all answers to lowest terms.

21. \(7/9 + 2/3\)

22. \(3 3/4 + 4 1/2 + 2 1/3 + 1 1/2\)

23. \(4/5\)

24. \(9/10 - 3/10\)

25. \(6/7 - 3/8\)

26. \(7 - 2 1/4\)
27. \[3 \frac{2}{5} - 1 \frac{7}{10} \]

28. \[\frac{2}{3} \times \frac{2}{3} \]

29. \[\frac{4}{5} \times 15 \frac{16}{1} \]

30. \[\frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} \]

31. \[12 \times 7 \frac{1}{2} \]

32. \[1 \frac{4}{5} \times 3 \frac{1}{3} \]

33. \[\frac{4}{5} \div \frac{5}{6} \]

34. \[\frac{7}{8} \div \frac{3}{10} \]

35. \[12 \div 1 \frac{1}{8} \]

36. \[4 \frac{2}{3} \div 1 \frac{1}{6} \]

37. Katie had ribbons the following lengths: 18 \(1/2\) inches, 16 \(3/4\) inches, and 20 \(2/5\) inches. How much ribbon did she have altogether?

38. Lynne's mom bought 15 feet of material. She used 3 \(7/8\) feet for a skirt. How much material was left?

39. If 80 oz. of kool aid was poured into 16 cups, how much would each cup receive?

40. How much rope is needed for 15 jump ropes if each rope is to be 10 \(3/4\) feet long?
Express in lowest terms.
1. \(\frac{18}{36}\)
2. \(\frac{24}{48}\)
3. \(\frac{65}{75}\)

Rewrite as a whole number or mixed number.
4. \(\frac{36}{9}\)
5. \(\frac{53}{8}\)
6. \(\frac{18}{10}\)

Express each as an equivalent fraction having the denominators as specified.
7. \(\frac{2}{9} = \frac{?}{63}\)
8. \(\frac{4}{15} = \frac{?}{30}\)
9. Express \(\frac{5}{8}\) in 64ths.

Change each fraction to having a common denominator and then arrange in order (greatest first).
10. \(\frac{3}{4}, \frac{3}{8}, \frac{5}{16}\)

Reduce each to lowest terms and then tell whether they are equal.
11. \(\frac{12}{16}\) and \(\frac{25}{35}\)
12. \(\frac{30}{60}\) and \(\frac{18}{36}\)

Round to the nearest cent.
13. \(\$4.53\) \(\frac{2}{9}\)
14. \(\$21.69\) \(\frac{5}{10}\)

Round to the nearest whole number.
15. \(9\) \(\frac{8}{15}\)
16. \(34\) \(\frac{1}{5}\)

OVER
Write as improper fractions.

17. 3 7/8
18. 10 5/7
19. 8 3/4

Do the indicated operation. Reduce all answers to lowest terms.

20. 6 7/8
   + 2 3/5

21. 24 3/4
   +19 5/8

22. 18
   + 20 5/9

23. 17 3/7
   +19 1/6

24. 7/8
   -1/4

25. 10
   -2 9/10

26. 14 6/7
   -6 3/8

27. 9 1/5
   -5 2/3

28. 3/8 x 10/27
29. 15 x 3/5
30. 2 1/3 x 24/35
31. 5 1/3 x 3/3/8
32. 7/8 ÷ 2/3
33. 7 ÷ 1/8
34. 4 2/3 ÷ 14
35. 7 1/2 ÷ 1 1/4

36. Round $13.4718 to the nearest dollar
37. tenth
38. hundredth
39. whole number

Round 25.1382 to the nearest place as indicated:

OVER
40. Mary bought ribbons in these lengths: 2 5/8 ft., 1 3/8 ft., and 2 1/8 ft. What was the total amount of ribbon Mary bought?

41. The crew of the Seagull caught 290 1/2 pounds of fish. It was to be split among 10 crewmen. How much fish would each person receive?

42. Susan wants to put a border around her dining room. Two walls are 10 1/2 ft. and the other two walls are 12 3/4 ft. How much border does Susan need to go around the four walls?

43. Mrs. Wells needed 25 pieces of rope each 2 1/2 feet long. How much rope did she need altogether?
Express in lowest terms.
1. $\frac{72}{81}$
2. $\frac{36}{48}$
3. $\frac{18}{24}$

Rewrite as a whole number or mixed number.
4. $\frac{63}{7}$
5. $\frac{47}{6}$
6. $\frac{38}{4}$

Express each as an equivalent fraction having the denominators as specified.
7. $\frac{1}{5} = \frac{?}{15}$
8. $\frac{11}{15} = \frac{?}{45}$
9. Express $\frac{7}{8}$ in 64ths.

Change each fraction to having a common denominator and then arrange in order (greatest first).
10. $\frac{4}{15}, \frac{2}{5}, \text{ and } \frac{1}{3}$

Reduce each to lowest terms and then tell whether they are equal.
11. $\frac{10}{14}$ and $\frac{15}{25}$
12. $\frac{24}{48}$ and $\frac{16}{32}$

Round to the nearest cent.
13. $\$2.76 \ 3/5$
14. $\$13.43 \ 2/7$

Round to the nearest whole number.
15. $7 \ \frac{7}{12}$
16. $12 \ \frac{4}{9}$
Write as improper fractions.

17. 2 7/20
18. 10 8/9
19. 9 5/9

Do the indicated operation. Reduce all answers to lowest terms.

20. \( \frac{7}{9} + \frac{2}{3} \)
21. \( 3 \frac{3}{4} + 4 \frac{1}{2} \)
22. \( 4/5 + 2 \frac{3}{10} \)
23. \( 11 \frac{3}{7} + 9 \frac{2}{5} \)
24. \( 2/3 - 1/8 \)
25. \( 7 - 2 \frac{1}{4} \)
26. \( 3 \frac{4}{5} - 1 \frac{3}{10} \)
27. \( 9 \frac{1}{3} - 3 \frac{5}{6} \)
28. \( 3/10 \times 8/9 \)
29. \( 1 \frac{4}{5} \times 3 \frac{1}{3} \)
30. \( 8/9 \times 7 \frac{1}{5} \)
31. \( 1 \frac{4}{5} \times 9 \)
32. \( 7/8 \div 3/10 \)
33. \( 12 \div 1 \frac{1}{8} \)
34. \( 4 \frac{2}{3} \div 1 \frac{1}{6} \)
35. \( 2 \frac{1}{4} \div 6 \)

36. Round 4,683,211 to the nearest thousand.

37. Round 14.0637 to the nearest place as indicated:

37. tenth
38. hundredth
39. whole number

OVER
40. How many shelves can be cut from a 14 foot piece of wood if each shelf is to be 3 1/2 feet?

41. Les weighed 117 3/4 pounds last month. This month he weighs 109 3/8 pounds. How much weight did Les lose?

42. Tracy bought 6 bags of fertilizer each weighing 5 3/4 pounds. What was the total weight of the 6 bags?

43. Leslie wanted shelves for her garage the following lengths: 15 2/5 feet; 13 1/5 feet; and 10 4/5 feet. What was the total amount of shelving needed?
Chapter 4
Finding Percents of Whole Numbers and Decimals
MLS: 8.10 & 9.2

Example: 43% of 77 is
Change 43% to .43
Multiply: .43 x 77 = 33.11

Complete the following:
1. 50% of 84 is ____  2. 7% of 63 is ____
3. 23% of 191 is ____  4. 75% of 840 is ____
5. 6.5% of 980 is ____  6. 8.4% of 1800 is ____
7. 97% of 28.5 is ____  8. 100% of 65.7 is ____
9. 25% of 30 is ____  10. 50% of 62 is ____
11. 75% of 64 is ____  12. 40% of 36 is ____
13. 30% of .9 is ____  14. 95% of 3.6 is ____
15. 42% of 6.7 is ____  16. 6% of 4.2 is ____
17. 48% of 78.2 is ____  18. 150% of 3.46 is ____
19. 65% of 7.34 is ____  20. 10% of 44.51 is ____

Word Problems:
21. Bob's team won 75% of their baseball games. They played 16 games in all. How many games did they win? ________
22. A factory is operating at 80% of capacity. The capacity is 300 cases per hour. How many cases are being produced each hour? ________
23. Of the 160 base hits a baseball player made last season, 35% were for extra bases. How many extra base hits did the player make last season? ________
24. Of the 240 trees the park department planted last month, 25% were maples. How many maple trees did they plant last month? ________
25. A salesman's commission is 3% of his total sales. His total sales last month were $24,000. How much was his commission last month? ________
Finding Percents of Whole Numbers and Decimals
MLS: 9.2 & 8.10

Example: 57% of 85 is _____.
Change 57% to .57
Multiply: .57 X 85 = _____.

Complete the following:

1. 40% of 80 is _____.
2. 35% of 200 is _____.
3. 50% of 23 is _____.
4. 25% of 63 is _____.
5. 7.4% of 800 is _____.
6. 9.6% of 700 is _____.
7. 30% of 90 is _____.
8. 17% of 34 is _____.
9. 65% of 35 is _____.
10. 25% of 64 is _____.
11. 75% of .6 is _____.
12. 80% of .4 is _____.
13. 5% of 7.4 is _____.
14. 85% of 1,700 is _____.
15. 68% of 24.8 is _____.
16. 100% of 345 is _____.
17. 150% of 90 is _____.
18. 30% of 42.66 is _____.
19. 80% of 7.2 is _____.
20. 5% of 1.20 is _____.

Word Problems:

21. On a typical day, 6% of the students at Wills School are absent. There are 650 students enrolled. How many students would be absent on a typical day? ________

22. During a sale Mrs. Cook purchased a blender for 75% of the regular price. The regular price was $36. What was the sale price? ________

23. A parking lot that has 120 spaces is 80% filled. How many cars are in the parking lot? ________

24. A truck can hold 1,800 cases. It is 95% filled. How many cases are on the truck right now? ________

25. How many questions out of 28 may a student miss and still get a grade of 75%? ________
Finding Percents of Whole Numbers and Decimals
MLS: 8.10 & 9.2

Complete:
1. 50% of 74 is ________.

2. 8% of 96 is ________.

3. 96% of 34.8 is ________.

4. 125% of 75 is ________.

5. Ned's commission is 4% of his total sales. His total sales last month were $36,000. How much was his commission last month? ________
Finding Percents of Whole Numbers and Decimals
MLS: 8.10 & 9.2

Complete:

1. 60% of 54 is ________.

2. 3% of 33 is ________.

3. 86% of 54.6 is ________.

4. 150% of 85 is ________.

5. After testing 2,000 transistors, an inspector found that 2% were defective. How many of the transistors were defective?
   ________
Finding What Percent One Number is of Another

Example: 3 is ____% of 25?

Use: \[
\frac{\text{IS}}{\text{OF}} = \frac{\text{x}}{100}
\]

\[
\frac{3}{25} = \frac{x}{100}
\]

\[
x = \frac{3 \times 100}{25} = 12\%
\]

Complete:

1. 35 is ____% of 140?
2. 150 is ____% of 240?
3. 55 is ____% of 66?
4. 108 is ____% of 90?
5. .5 is ____% of 1.6?
6. .32 is ____% of 1.6?
7. 42 is ____% of 56?
8. 84 is ____% of 70?
9. 7 is ____% of 16?
10. 57 is ____% of 60?
11. 16 is ____% of 80?
12. 85 is ____% of 170?
13. 52 is ____% of 78?
14. 24 is ____% of 64?
15. ____% of 48 is 7.2.
16. ____% of 60 is 2.1.

17. Some Boy Scouts want to collect 1000 pounds of old papers. After they collect 350 pounds, what percent of their goal will have been collected? _____

18. There are 48 spaces in a parking lot. When 42 of those spaces are filled, what percent of the spaces are filled? _____

19. Jackie has 75 papers to sell. He has sold 45. What percent of the total number of papers has he sold? _____

20. Tim had a new ignition system installed in his car. The total bill was $120, which included a $40 charge for labor. What percent of the total bill was the charge for labor? (Round to the nearest whole percent). _____
Finding What Percent One Number is of Another
MLS: 8.11 & 9.2

Example: 18 is _____% of 72

Use: \[
\frac{\text{Is}}{\text{Of}} = \frac{x}{100}
\]

\[
\frac{18}{72} = \frac{x}{100}
\]

\[
72x = 1800 \quad 72/1800
\]

\[
x = 25\%
\]

Complete:

1. 25 is _____% of 125?
2. 75 is _____% of 200?
3. .5 is _____% of .625?
4. 50 is _____% of 60?
5. 63 is _____% of 70?
6. .375 is _____% of .75?
7. 37.5 is _____% of 50?
8. 5 is _____% of 4?
9. 350 is _____% of 200?
10. _____% of 60 is 20.
11. _____% of 180 is 30.
12. _____% of 20 is 15.
13. _____% of 64 is 40.
14. _____% of 25 is 2.
15. 12 is what percent of 80?
16. 21 is what percent of 350?
17. Twenty-four of the 30 students invited to a party were able to attend. What percent of the students were able to attend?
18. During a basketball game, Scottie attempted 15 baskets and made 6. What percent of the baskets that he attempted did he make?
19. Thomas answered 33 test questions correctly. There were 40 questions in all. What percent of the questions did he answer correctly?
20. Out of 216 votes for class president, Jack received 135 votes. What percent of the votes did he receive?
Finding What Percent One Number is of Another
MLS: 8.11 & 9.2

Complete: (SHOW ALL WORK)

1. 25 is _______% of 275?

2. 57 is _______% of 380?

3. 21 is _______% of 70?

4. 33 is _______% of 99?

5. The sales tax on a $100 purchase was $5. The sales tax is what percent of the regular price? _______
Finding What Percent One Number is of Another
MLS: 8.11 & 9.2

Complete: (SHOW ALL WORK)

1. 95 is ____% of 190?

2. 72 is ____% of 60?

3. 24 is ____% of 96?

4. 8 is ____% of 20?

5. Out of a total of 400 votes, Elly received 252 votes. What percent of the votes did she receive? ________
Percent Review

Write as a percent.
1. 0.15
2. 0.65
3. 10.0
4. 7
5. 0.255
6. 0.166
7. 2.5
8. 5.75

Write as a decimal.
9. 10%
10. 5%
11. 75%
12. 100%
13. .58%
14. 1.5%
15. 1.075%
16. 10.8%

Write as a fraction in lowest terms. SHOW WORK.
17. 10%
18. 50%
19. 18%
20. 98%
21. 150%
22. 102%

Write as a percent. SHOW WORK.
23. 1/2
24. 3/4
25. 5/6
26. 3/8
27. 7/10
28. 7/50
29. 4/5
30. 9/25

Find: SHOW WORK.
31. 10% of 100 =
32. 14% of 50 =
33. 50% of 75 =
34. 75% of 16 =
35. % of 30 = 3.
36. % of 75 = 25.
37. % of 100 is 80.
38. % of 48 is 9.60
Word Problems:

39. Kim's team won 75% of their softball games. They played 12 games in all. How many games did they win? 

40. A factory is operating at 85% capacity. The capacity is 450 cases per hour. How many cases are being produced each hour? 

41. Of the 300 trees the park department planted last month, 15% were oaks. How many oak trees did they plant last month? 

42. Some Girl Scouts want to collect 500 pounds of cans. They have collected 300 pounds. What percent of their goal have they collected? 

43. Eighteen of the 24 students in Mr. Smith's zoology class were present. What percent of students were present? 

44. Lana bought a dress for $75. The sales tax was $4.50. What percent of sales tax did Lana pay?
Write each of the following as a percent, decimal, and fraction.

1. Nine hundredths
2. Forty-three hundredths

Express each as a decimal.

3. 2\%  
4. 23\%  
5. 213\%  
6. 102 2/6\%  
7. 3.4\%  
8. .9\%

Express each as a percent.

9. .04  
10. .7  
11. 2.26  
12. .814  
13. .15 1/3  
14. 8  

Express each as a mixed number or fraction in lowest terms.

15. 27\%  
16. 8 1/3\%  
17. 16\%  
18. 4\%  
19. 375\%
Express each as a percent.

20. \( \frac{9}{10} \)  
21. \( \frac{23}{25} \)  
22. \( \frac{11}{8} \)  
23. \( \frac{94}{94} \)  
24. \( 7 \frac{1}{4} \)  
25. \( \frac{1}{6} \)  

Find the following: SHOW ALL WORK.

26. 60% of 80 is _____.
27. 92% of 4,000 is _____.
28. 8 1/2% of $45.82 is ____. 
29. What percent of 400 is 36?
30. 7 is what percent of 10?

Round 72,931,475 to the nearest 
31. ten thousand
32. hundred

Round 13.4067 to the nearest 
33. tenth
34. hundredth
35. whole number

36. Round $27.5296 to the nearest cent.

Do the indicated operations.

37. \( .459 + 5.88 + 127.6 + 7 \)
38. \( \$30 - \$6.21 \)
39. \( .48 \times .007 \)
40. \( .8 \div .08 \)
41. \( 10 \frac{1}{8} + 5 \frac{1}{2} + 7 \frac{3}{4} \)
42. \( 13 \frac{1}{7} - 9 \frac{5}{6} \)
43. \( 3 \frac{2}{3} \times 4 \frac{1}{2} \)
44. \( 18 \div 2 \frac{1}{4} \)
45. Lynn wants to buy a sofa which costs $869, a chair for $357 and 2 end tables at $169 each. Estimate by rounding to the nearest ten what Lynn's total cost would be.

46. Find the average (to the nearest whole number) for Ted's test scores: 75, 77, 83, 70, 69, and 87.

47. Mrs. Ritter stored her fur coat for the summer and was charged 2\% of its value. If the coat is valued at $750, how much was she charged?
Write each of the following as a percent, decimal, and fraction.

1. Eighteen hundredths
2. Seventy-six hundredths

Express each as a decimal.
3. 8%
4. 53%
5. 119%
6. 316 1/7%
7. .6%
8. 4.7%

Express each as a percent.
9. .06
10. .9
11. 1.12
12. .37 1/2
13. .625
14. 2

Express each as a mixed number or fraction in lowest terms.
15. 75%
16. 2%
17. 89%
18. 125%
19. 16 2/3%
Express each as a percent.
20. \(\frac{3}{4}\)  
21. \(\frac{2}{3}\)  
22. \(\frac{3}{100}\)  
23. \(\frac{19}{50}\)  
24. \(\frac{7}{4}\)  
25. \(\frac{18}{18}\)

Find the following: SHOW ALL WORK.
26. 18% of 46 is 
27. 6% of 24 is 
28. 4 1/2% of $22.50 is 
29. What percent of 15 is 6?
30. 150 is what percent of 500?

Round 36,476,543 to the nearest
31. million
32. ten

Round 27.5162 to the nearest
33. tenth
34. hundredth
35. whole number

36. Round $35.1431 to the nearest cent.

Do the indicated operations.
37. \(6.03 + 3.49 + 14 + 0.078\)
38. $10 - $2.47
39. \(1.9 \times 0.27\)
40. \(2.7 \div 0.09\)
41. \(14 \frac{2}{3} + 5 \frac{3}{5}\)
42. \(8 \frac{1}{4} - 3 \frac{1}{3}\)
43. \(3 \frac{1}{7} \times 4 \frac{2}{3}\)
44. \(9 \frac{1}{2} \div 8 \frac{3}{4}\)
45. Forrest had 387 sophomores, 268 juniors and 33 seniors in summer school. Estimate by rounding to the nearest ten what the total summer school enrollment was. ____________________

46. Find the average (to the nearest whole number) for Leslie's test scores: 82, 97, 88, 75, 92, and 89. ____________________

47. Mr. Becker bought a house for $39,500 and made a down payment of 20%. What is the amount of the down payment? ____________________
Find the weekly wage for the following. Time and a half is paid for all hours worked over 40.

<table>
<thead>
<tr>
<th>Number of hours worked</th>
<th>Rate per hour</th>
<th>Weekly wages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 33</td>
<td>$4.20</td>
<td>1.___________</td>
</tr>
<tr>
<td>2. 27</td>
<td>$3.90</td>
<td>2.___________</td>
</tr>
<tr>
<td>3. 37</td>
<td>$5.10</td>
<td>3.___________</td>
</tr>
<tr>
<td>4. 40</td>
<td>$5.75</td>
<td>4.___________</td>
</tr>
<tr>
<td>5. 38</td>
<td>$4.65</td>
<td>5.___________</td>
</tr>
<tr>
<td>6. 29</td>
<td>$6.15</td>
<td>6.___________</td>
</tr>
<tr>
<td>7. 35 1/2</td>
<td>$6.20</td>
<td>7.___________</td>
</tr>
<tr>
<td>8. 37 1/4</td>
<td>$7.72</td>
<td>8.___________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of hrs. worked</th>
<th>Hourly rate</th>
<th>Regular wages</th>
<th>Overtime rate</th>
<th>Overtime wages</th>
<th>Total Wages</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. 43</td>
<td>$5.40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. 47</td>
<td>$6.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. 54</td>
<td>$5.80</td>
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<td>12. 45</td>
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<td>13. 48</td>
<td>$6.32</td>
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<tr>
<td>14. 50 1/2</td>
<td>$5.60</td>
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<tr>
<td>15. 44 1/4</td>
<td>$6.40</td>
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</tr>
<tr>
<td>16. 46 1/2</td>
<td>$6.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

17. Alicia worked 37 hours last week and earned $4.75 an hour. What was her total pay for the week? ____________
18. Fred worked 40 hours last week and earns $5.15 an hour. How much did Fred earn last week? ____________

19. Nelson earns $5.70 an hour. He worked 43 hours this week. What will be his total pay? ____________

20. Last summer Nancy earned $5.20 an hour. One week she worked 54 hours. What was her total pay? ____________
Find the weekly wage for the following. Time and a half is paid for all hours worked over 40.

<table>
<thead>
<tr>
<th>Number of hours worked</th>
<th>Rate per hour</th>
<th>Weekly wages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 29</td>
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<td></td>
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<tr>
<td>2. 36</td>
<td>$4.30</td>
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</tr>
<tr>
<td>3. 32</td>
<td>$3.75</td>
<td></td>
</tr>
<tr>
<td>4. 40</td>
<td>$5.65</td>
<td></td>
</tr>
<tr>
<td>5. 32 1/2</td>
<td>$6.80</td>
<td></td>
</tr>
<tr>
<td>6. 38 1/2</td>
<td>$10.00</td>
<td></td>
</tr>
<tr>
<td>7. 25 1/2</td>
<td>$9.20</td>
<td></td>
</tr>
<tr>
<td>8. 18 1/4</td>
<td>$8.25</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Number of hrs. worked</th>
<th>Hourly rate</th>
<th>Regular wages</th>
<th>Overtime rate</th>
<th>Overtime wages</th>
<th>Total Wages</th>
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<tbody>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>10. 42</td>
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<td>11. 48</td>
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</tr>
<tr>
<td>13. 53</td>
<td>$4.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. 43 1/2</td>
<td>$4.30</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. 46 1/2</td>
<td>$9.28</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. 49 1/4</td>
<td>$6.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

17. Kemecia worked 38 hours last week and earned $4.30 an hour. What was her total pay for the week? __________
18. Ned worked 40 hours last week and earns $5.25 an hour. How much did Ned earn last week?  

19. Jessica earns $4.90 an hour. She worked 44 hours this week. What will be her total pay?  

20. Last summer Abby earned $3.95 an hour. One week she worked 25 hours. What was her total pay?  
Hourly and Overtime Wages
MLS: 11.6

Find the weekly wage for the following. Time and a half is paid for all hours worked over 40.

<table>
<thead>
<tr>
<th>Number of hours worked</th>
<th>Rate per hour</th>
<th>Weekly wages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 40</td>
<td>$5.90</td>
<td>1.___________</td>
</tr>
<tr>
<td>2. 35</td>
<td>$5.55</td>
<td>2.___________</td>
</tr>
<tr>
<td>3. 39 1/2</td>
<td>$4.80</td>
<td>3.___________</td>
</tr>
<tr>
<td>4. 44</td>
<td>$5.20</td>
<td>4.___________</td>
</tr>
<tr>
<td>5. 47</td>
<td>$5.75</td>
<td>5.___________</td>
</tr>
</tbody>
</table>
Hourly and Overtime Wages
MLS: 11.6

Find the weekly wage for the following. Time and a half is paid for all hours worked over 40.

<table>
<thead>
<tr>
<th>Number of hours worked</th>
<th>Rate per hour</th>
<th>Weekly wages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 40</td>
<td>$4.70</td>
<td></td>
</tr>
<tr>
<td>2. 38</td>
<td>$6.12</td>
<td></td>
</tr>
<tr>
<td>3. 34 1/2</td>
<td>$3.80</td>
<td></td>
</tr>
<tr>
<td>4. 43</td>
<td>$6.20</td>
<td></td>
</tr>
<tr>
<td>5. 51</td>
<td>$4.95</td>
<td></td>
</tr>
</tbody>
</table>
Find the weekly wages for the following. Time and a half is paid for all hours worked over 40.

<table>
<thead>
<tr>
<th>Number of hrs. worked</th>
<th>Rate per hour</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 37</td>
<td>$5.30</td>
<td>1.</td>
</tr>
<tr>
<td>2. 39</td>
<td>$5.75</td>
<td>2.</td>
</tr>
<tr>
<td>3. 40</td>
<td>$6.15</td>
<td>3.</td>
</tr>
<tr>
<td>4. 38 1/2</td>
<td>$6.20</td>
<td>4.</td>
</tr>
<tr>
<td>5. 35 1/4</td>
<td>$7.15</td>
<td>5.</td>
</tr>
<tr>
<td>6. 44</td>
<td>$6.10</td>
<td>6.</td>
</tr>
<tr>
<td>7. 48</td>
<td>$7.25</td>
<td>7.</td>
</tr>
<tr>
<td>8. 45 1/2</td>
<td>$8.50</td>
<td>8.</td>
</tr>
</tbody>
</table>

9. Jennie worked 36 hours last week and earned $4.95 an hour. What was her total pay?

10. Lisa worked 47 hours this week and earns $5.10 an hour. What will be her total pay?

11. Arrange the following numbers in order (largest first):
    8,463,792  8,463,729  8,364,792  8,364,729

Round 17,647,391 to the nearest

12. hundred
13. ten thousand
14. million

Round 38.4609 to the nearest

15. tenth
16. whole number
17. thousandth

Change to equivalent fractions.

18. .7
19. .39
20. .215
21. 15% of 80 is ___.
22. 6 is what percent of 18?

Do the indicated operations.

23. 13.4 + .097 + 28
24. 113 - .42
25. 7.9 x .081
26. 3.28 ÷ .4
27. 14 2/5 + 9 1/2 + 11 3/10
28. 17 - 8 3/7
29. 4 1/5 x 3 2/7

30. Jenco Office Products bought 17 adding machines at $129 each. Estimate by rounding to the nearest ten the total cost of the machines.

31. The temperatures in Jacksonville for the past week have been: 99°, 97°, 98°, 99°, 100°, 96°, and 99°. Find the average temperature for the past week (round to the nearest whole degree).

32. Lindsay needed a piece of lace 24 inches long. Her mother had a piece 18 3/8 inches. How much too short was the piece her mother had?

33. Shane earned $320 last week. He always puts 20% of his earnings into his savings account. How much did he put into savings?
Find the weekly wages for the following. Time and a half is paid for all hours worked over 40.

<table>
<thead>
<tr>
<th>Number of hrs. worked</th>
<th>Rate per hour</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 33</td>
<td>$4.80</td>
<td>1. ________________</td>
</tr>
<tr>
<td>2. 40</td>
<td>$5.95</td>
<td>2. ________________</td>
</tr>
<tr>
<td>3. 38</td>
<td>$4.75</td>
<td>3. ________________</td>
</tr>
<tr>
<td>4. 32 1/2</td>
<td>$5.80</td>
<td>4. ________________</td>
</tr>
<tr>
<td>5. 29 1/4</td>
<td>$7.23</td>
<td>5. ________________</td>
</tr>
<tr>
<td>6. 45</td>
<td>$7.20</td>
<td>6. ________________</td>
</tr>
<tr>
<td>7. 52</td>
<td>$8.15</td>
<td>7. ________________</td>
</tr>
<tr>
<td>8. 47 1/2</td>
<td>$6.50</td>
<td>8. ________________</td>
</tr>
</tbody>
</table>

9. Becky worked 38 hours last week and earned $5.27 an hour. What was her total pay? ________________

10. Anne worked 49 hours this week and earns $6.20 an hour. What will be her total pay? ________________

11. Arrange the following numbers in order (largest first):
    6,546,324  6,546,432  6,456,324  6,456,432

    ________________

Round 96,356,485 to the nearest

12. hundred ________________
13. ten thousand ________________
14. million ________________

Round 49.5718 to the nearest

15. tenth ________________
16. whole number ________________
17. thousandth

Change to equivalent fractions.

18. .9

19. .67

20. .155

21. 25% of 90 is _____.

22. 8 is what percent of 48?

Do the indicated operations.

23. 27.5 + .186 + 46

24. 427 - .58

25. 8.3 x .096

26. 9.027 ÷ .03

27. 26 3/4 + 13 1/2 + 17 5/6

28. 35 - 9 4/9

29. 2 5/8 x 2 2/5

30. The Chorale presented three performances this year. 1,079 persons attended the first performance, 785 the second performance, and 981 the third performance. Estimate by rounding to the nearest hundred, the total attendance of the three performances.

31. What was the average daily temperature for a week if the temperatures were as follows: Monday, 15°; Tuesday, 16°; Wednesday, 19°; Thursday, 14°; Friday, 18°; Saturday, 14°; and Sunday, 16°?

32. A 4 1/4 pound chicken weighed 3 1/8 pounds when dressed. Find the loss in weight.

33. A certain plane used 175.2 gallons of gasoline per hour. If its flight lasted 4.5 hours, how many gallons of gasoline were used?
Chapter 7
General Math II
Worksheet #1

Comparison Shopping
MLS: 11.2

Find the cost of:

1. 1 lb. of flour if 2 lbs. cost $1.79.
2. 1 orange if 6 oranges cost $.99
3. 3 jars of mustard if 1 jar cost $.54
4. 4 cans of tuna if 2 cans cost $.75
5. 6 boxes of pudding if 2 boxes cost $.48
6. 16 oz. of vegetable oil if 64 oz. cost $5.12.
7. 1/2 lb. of cookies if 1 lb. costs $1.89
8. 18 cupcakes if 1 dozen costs $1.69
9. 3 1/2 lbs. of ground beef if 1 lb. costs $1.79
10. Find the cost of 3 dozen eggs, 1/2 lb. of butter, 2 lbs. of flour and 1/2 gal. of milk if 1 dozen eggs cost $.85; 1 lb. of butter cost $.79; 1 lb. of flour cost $1.35; and 1 gal. of milk cost $1.79.

Find the unit price (cost per single item) to the nearest cent:

11. 8 jars of baby food costing $1.84
12. 12 apples costing $.72
13. 2 dresses costing $64.82

Which is the better buy?

14. Peaches: 6 for $.68 or 3 for $.35
15. Donuts: 12 for $2.19 or 4 for $.55
16. Soup: 8 cans for $2.00 or 3 cans for $.99
17. Onions: 3 lbs. for $1.28 or 2 lbs. for $.89
18. Pears: 2 for $.35 or 5 for $.59
19. Tapes: 3 for $4.99 or 2 for $3.19
20. Icicles: 2 pkgs. for $.69 or 1 pkg. for $.45
General Math II  
Worksheet #2

Name__________________________  
Date__________________________

Comparison Shopping  
MLS: 11.2

Find the cost of:

1. 1 can of peaches if 2 cans cost $1.34  
2. 1 lb. of coffee if 5 lbs. cost $3.37  
3. 1 pkg. of cookies if 3 pkgs. cost $1.88  
4. 5 loaves of bread if 1 loaf cost $1.19  
5. 3 cans of fruit juice if 4 cans cost $2.00  
6. 3 gallons of milk if 1 gallon costs $2.25  
7. 5 lbs. of onions if 2 lbs. costs $.66  
8. 1 1/2 doz. brownies if 6 brownies cost $.75  
9. 2 lbs. of chicken if 1 lb. cost $1.29  
10. Find the cost of 4 bunches of carrots, 
    1 head of lettuce, 4 1/2 lbs. of chicken, 
    and 1 1/2 lbs. of string beans if carrots 
    cost 2 bunches for $.51; lettuce cost 2 
    heads for $.95; chicken cost $.79 a lb.; 
    and string beans cost $.40 a lb.  
11. Find the unit price (cost per single item) to the nearest cent:

11. 4 tires costing $328 
12. 10 ears of corn costing $2.69 
13. 3 tapes costing $10.97 

Which is the better buy?

14. Pears: 2 for $.35 or 5 for $.59  
15. Plums: 4 for $.39 or 10 for $.89  
16. Donuts: 4 for $.95 or 12 for $3.09  
17. Grass seed: 5 lbs. for $7.25 or 25 lbs. 
    for $29.75
18. Soap: 4 bars for $1.29 or 6 bars for $1.43
19. Tissue: 2 boxes for $1.89 or 6 boxes for $5.00
20. Muffin mix: 4 boxes for $1.00 or $.33 for 1 box
Find the cost of the following:

1. 1 can of punch if 2 cans cost $2.29
2. 3 cans of beans if 1 can cost $.49
3. 6 bags of chips if 2 bags cost $.89
4. 4 1/2 lbs. of steak at $4.69 a lb.
5. 1/2 lb. of butter if 1 lb. cost $1.19

Find the unit price (cost per single item) to the nearest cent:

6. 5 oranges at $.70
7. 2 pair of sandals at $8.94

Which is the better buy?

8. Apples: 12 for $1.68 or $.15 a piece
9. Donuts: 12 for $3.09 or $.35 a donut
10. Candy: 4 bags for $1.96 or 2 for $1.00
General Math II
Quiz #2

Name ____________________
Date ____________________

Comparison Shopping
MLS: 11.2

Find the cost of the following:

1. 1 can of beans if 3 cans cost $1.00 1.______________
2. 4 cans of corn if 5 cans cost $2.00 2.______________
3. 10 lbs. of potatoes if 5 lbs. cost $1.89 3.______________
4. 3 3/4 lbs. of chicken at $1.59 a lb. 4.______________
5. 1/2 gal. of milk if 1 gal. cost $2.29 5.______________

Find the unit price (cost per single item) to the nearest cent:

6. 3 grapefruits cost $.69 6.______________
7. 2 video tapes cost $7.50 7.______________

Which is the better buy?

8. Oranges: 10 for $1.56 or $.12 a piece 8.______________
9. Donuts: 6 for $1.89 or $.35 a donut 9.______________
10. Coke: 12 cans for $2.69 or 6 cans for $1.59 10.______________
COMPARISON SHOPPING QUIZ

1. Which is the better buy?

   - **PENCILS**
     - A: 12 for $96
     - B: 10 for $75
     - C: 24 for $1.74

2. A 15 oz jar of orange juice costs 63¢ and a 1 quart 4 ounce jar costs $1.56. Which costs less per ounce?

3. A 1.5 liter jar of peanut butter costs $2.10. What is the cost per liter?

4. A 16 ounce coke costs 24¢. A quart bottle of coke cost 35¢. Which costs less per ounce?

5. Which costs less per ounce?

   - 4 oz: 65¢
   - 6 oz: 90¢
   - 8 oz: $1.30

6. Which store has the better deal?

   - **Big B Store**
     - Clock radio
     - Reg. Price $32.50
     - 1 7 off

   - **Little A Store**
     - Clock radio
     - Reg. Price $32.50
     - 25% off

7. A 9 ounce jar of jelly costs 69¢. Find the cost per ounce to the nearest tenth of a cent.

8. A dress that regularly sells for $16 is marked 25% off. Another dress that regularly sells for $24 is marked 1/3 off. On which dress would you save the most?

9. A 1-pound 12-ounce bag of flour costs a quarter while a 5 pound bag cost 63¢. Which costs less per ounce?

10. Which is the better buy?

    - **Napkins**
      - A: 200 for 59¢
      - B: 150 for 48¢
      - C: 450 for 72¢
Find the amount of discount and sale price for each.

<table>
<thead>
<tr>
<th>List Price</th>
<th>Discount Rate</th>
<th>Amount of Discount</th>
<th>Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>$300.00</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$75.00</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$37.50</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$349.50</td>
<td>45%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$499.98</td>
<td>40%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$775.00</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$49.25</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$99.50</td>
<td>60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$1,550</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$960</td>
<td>33 1/3%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. West Lumber Co. offers a discount of 15% to retail buyers. How much would Mr. Smith save if he bought fencing which normally sells for $550?

12. An organ was originally priced at $1250 and was sold at a discount of 25%. Find the amount of the discount and the sale price.

13. Bill found a sale on stereo systems where the sale price was 1/4 off the regular price. How much did he pay for the stereo if the regular price was $776?

14. At the end-of-summer sale, Kim found a $50 swim suit marked 30% off. How much would she save if she bought this suit?

15. Patti bought a sofa which was marked 1/3 off the original price. How much did she save if the sofa was originally priced $945?
Discounts
MLS: 11.4

Find the amount of discount and sale price for each.

<table>
<thead>
<tr>
<th>List Price</th>
<th>Discount Rate</th>
<th>Amount of Discount</th>
<th>Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. $250.00</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. $125.00</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. $48.50</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. $85.50</td>
<td>45%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. $159.75</td>
<td>40%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. $985.00</td>
<td>45%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. $33.23</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. $109.50</td>
<td>60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. $2,770</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. $1,230</td>
<td>33 1/3%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. Mike's Hardware Co. offers a discount of 10% to retail buyers. How much would Mr. White save if he bought piping which normally sells for $125?

12. A piano was originally priced at $975 and was sold at a discount of 30%. Find the amount of the discount and the sale price.

13. Tedd found a sale on car accessories where the sale price was 1/4 off the regular price. How much would he pay for car accessories that totaled $88?

14. At a clearance sale, Dana found a suit marked 25% off. How much would she save if the original price was $120?

15. Lenny bought a chair which was marked 1/3 off the original price. How much did he save if the chair was originally priced $630?
General Math II
Quiz #1

Name ____________________________
Date ____________________________

Discount
MLS: 11.4

1. A dishwasher was originally priced at $350. It was sold at a discount of 25%. What was the amount of the discount?

2. If a video tape listed at $24.95 and was sold at a discount of 15%, how much is the discount?

3. During a 1/3 off sale, Mrs. Brown bought a sofa that had originally been marked $684. How much did she pay for the sofa?

4. Mrs. White bought a VCR that was on sale for 20% off. If the original price was $399, what was the sale price?

5. Bernie was able to purchase a swing set listed at $249.99 at a discount of 35%. How much did he have to pay for the swing set?
1. A dryer was originally priced at $425. It was sold at a discount of 25%. What was the amount of the discount?

2. If a lamp listed at $89.97 and was sold at a discount of 15%, how much was the discount?

3. During a 1/4 off sale, Lettie bought a 14K gold chain that had originally been marked $172. How much did she pay for the chain?

4. Mrs. Wade bought two end tables that were on sale for 20% off. If the original price was $240 each, what was the sale price for the two end tables?

5. Gary was able to purchase a lawn mower listed at $449.99 at a discount rate of 30%. How much did he have to pay for the lawn mower?
1. A piano that was originally priced for $1260 was sold at a discount of 25%. Find the amount of the discount and the sale price.

2. If a book listed at $4.50 and is sold at a discount of 12%, how much is the discount?

3. A dress regularly costing $25 is on sale for $17.50. How much is the discount and the discount rate?

4. School supplies are listed in a catalog at $425, but are sold to the school at a discount of 13%. What was the cost of the school supplies to the school?

5. A piano is marked to sell for $600 is sold for $400. What is the rate of discount received?

6. During a 1/3 off sale, Jack's mother bought a chair that had originally been marked $135. How much did she pay for the chair?

7. Mr. Ponder bought a typewriter that was on sale for 20% off. If the original price was $329, what was the sale price?

8. A microphone is put on sale at a discount rate of 20% off the regular price of $13.95. How much will the buyer have to pay for the microphone?

9. George was able to purchase a hammock listed at $14.99 at a discount rate of 40%. How much did he have to pay for the hammock?

10. A baseball glove which lists for $8 is sold for $6 at a sale. How much is the discount? What is the rate of discount?

11. If a $1.60 tie sells for $1.20 at a sale, find the rate of discount.
Find the sales tax and selling price for each of the following:

<table>
<thead>
<tr>
<th>Item</th>
<th>Regular Price</th>
<th>Sales Tax Rate</th>
<th>Amount of Sales Tax</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. dress</td>
<td>$48</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. shoes</td>
<td>$35</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. computer</td>
<td>$899.99</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. lamp</td>
<td>$74</td>
<td>6 1/2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. TV</td>
<td>$189</td>
<td>5 1/2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. If the sales tax rate is 6%, how much would you pay on $2,500? ______

7. Carla bought a typewriter for $85. If there is 6% sales tax, how much was her total purchase including tax? ______

8. Lori bought a coffee pot for $10.90. If there is 5% sales tax, how much was her total purchase including tax? ______

9. Lois bought a car for $5995. If there is a 4% sales tax rate, how much was the total purchase including tax? ______

10. John purchased a bat for $10.50, a ball for $5.50, and a glove for $25.45. The sales tax is 7% so how much was his total purchase including tax? ______

11. Lawrence bought a chair for $95 and a coffee table for $64. If there is a 5% sales tax, how much was his total purchase including tax? ______

12. Sam bought a tire for $25.95 and a muffler for $39.40. If there is a 4% sales tax, how much was his total purchase including tax? ______

13. Randy bought a basketball for $22.95 and a pair of tennis shoes for $26.95. If there is a 5% sales tax, how much was the total purchase including tax? ______
14. You have been saving quarters, dimes and nickels. You have 14 quarters, 32 dimes and 42 nickels. How much do you have?

15. Sally has 4 five dollar bills, 32 one dollar bills and 15 quarters. How much money does she have?

16. How many dimes are there in $2.47?

17. How much money would you have if you had 3 twenty dollar bills, 5 ten dollar bills, 4 five dollar bills, 14 one dollar bills, 4 quarters, 5 dimes, 13 nickels, and 21 pennies?

Find the exact number of each denomination of bills and coins which could be used to make change for each sales ticket. Write the bills and coins in the space below each ticket. Write the amount of change in the space provided.

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>px</td>
<td>.43</td>
<td></td>
</tr>
<tr>
<td>co</td>
<td>3.79</td>
<td></td>
</tr>
<tr>
<td>su</td>
<td>1.34</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>px</td>
<td></td>
<td>4.29</td>
</tr>
<tr>
<td>px</td>
<td></td>
<td>1.29</td>
</tr>
<tr>
<td>co</td>
<td></td>
<td>.23</td>
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<td>su</td>
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<tr>
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<tr>
<td>tax 5%</td>
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<tr>
<td>TOTAL</td>
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<td></td>
</tr>
<tr>
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<td>15.00</td>
<td></td>
</tr>
<tr>
<td>Change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$20 bills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$10 bills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$ 5 bills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$ 1 bills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>quarters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dimes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nickels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pennies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Find the exact number of each denomination of bills and coins which could be used to make change for each sales ticket. Write the bills and coins in the space below each ticket. Write the amount of change in the space provided.

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>px</td>
<td>3.76</td>
<td></td>
</tr>
<tr>
<td>px</td>
<td>.43</td>
<td></td>
</tr>
<tr>
<td>co</td>
<td>3.79</td>
<td></td>
</tr>
<tr>
<td>su</td>
<td>1.34</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>px</td>
<td></td>
<td>4.29</td>
</tr>
<tr>
<td>px</td>
<td></td>
<td>1.29</td>
</tr>
<tr>
<td>co</td>
<td></td>
<td>.23</td>
</tr>
<tr>
<td>su</td>
<td></td>
<td>1.69</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tax 5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash</td>
<td>15.00</td>
<td></td>
</tr>
<tr>
<td>Change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$20 bills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$10 bills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$ 5 bills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$ 1 bills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>quarters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dimes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nickels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pennies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FIGURING SALES TAX (from Gawronski, Prigge, & Vos)

When the Chaparro's buy clothes, they must pay the purchase price plus a 6% sales tax.

### Men's Selected Spring Suits

<table>
<thead>
<tr>
<th>Purchase</th>
<th>Tax</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. $45.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. $5.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. $76.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. $104.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. $250.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. $20.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Find the sales tax and the total amount paid for the suit advertised at $109.97.

\[
6\% = \frac{6}{100} \text{ or } 0.06
\]

\[
\begin{align*}
&\text{Cost} \\
&\times 0.06 \\
&\text{Sales tax (round off to $6.60)}
\end{align*}
\]

\[
\begin{align*}
&\text{Cost} \\
&+ 6.60 \\
&\text{Sales tax} \\
&\text{Total amount paid}
\end{align*}
\]

### Pullover Shirts

**SAVE $1!** Pullover Shirts

Comfortable roundneck style tops are great for summer activities. Assorted solids and fashion patterns. Sizes S, M, L, XL.

<table>
<thead>
<tr>
<th>Purchase</th>
<th>Tax</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. $78.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. $135.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. $2.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. $44.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. $49.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. $15.63</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Using the newspaper ad on the left, answer the following questions.

13. What is the sales tax on the regular price of the shirts? ________

14. What is the sales tax on the sale price of the shirts? ________

15. What is the difference in the sales tax on the regular price and the sales tax on the sale price? ________

16. Orlando bought two shirts on sale. How much was the total tax, and what was the total that he had to pay? ________

<table>
<thead>
<tr>
<th>Purchase</th>
<th>Tax</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. $78.50</td>
<td>3.41</td>
<td>$81.91</td>
</tr>
<tr>
<td>14. $2.88</td>
<td>0.17</td>
<td>$3.05</td>
</tr>
<tr>
<td>15. $3.24</td>
<td>-</td>
<td>$3.24</td>
</tr>
<tr>
<td>16. $15.63</td>
<td>0.94</td>
<td>$16.57</td>
</tr>
</tbody>
</table>
You are required to pay a sales tax on your purchase. The sales tax on all items bought is 3%. How much is the sales tax on a $126.38 purchase? What is the total cost?

<table>
<thead>
<tr>
<th>Purchase</th>
<th>Sales tax</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>$126.38</td>
<td>x 0.03</td>
<td>$130.17</td>
</tr>
</tbody>
</table>

$3.79 = (remember 3% = 0.03)

Complete the following table.

<table>
<thead>
<tr>
<th>Item</th>
<th>Sale Price</th>
<th>Sales Tax %</th>
<th>Sales Tax</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tapedeck</td>
<td>$126.38</td>
<td>3%</td>
<td>$3.79</td>
<td>$130.17</td>
</tr>
<tr>
<td>2. Mower</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Glove</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Radio</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Tape</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Briefcase</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Bike</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Calculator</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Kathy Hall bought a suitcase for $127.30. The sales tax was 7%. What was the total cost? ________________

10. Tom Vos bought a dictionary for $58.95. The sales tax was 4%. What was his total cost? ________________
SHOPPING FOR PERSONAL CARE ITEMS (from Gawronski, Prigge, & Vos)

Use the ads to complete each sales slip below. Calculate the cost of each item and find the total cost including 6% sales tax.

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
<th>Item</th>
<th>Cost</th>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 bars of soap</td>
<td>1.49</td>
<td>Baby Powder</td>
<td>1.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouthwash</td>
<td>1.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shampoo</td>
<td>99¢</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 toothbrushes</td>
<td>99¢</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>6% sales tax</td>
<td>Subtotal</td>
<td>6% sales tax</td>
<td>Subtotal</td>
<td>6% sales tax</td>
</tr>
<tr>
<td>2 boxes cotton swabs</td>
<td>1.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 stick deodorants</td>
<td>79¢</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 tubes toothpaste</td>
<td>97¢</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>6% sales tax</td>
<td>Subtotal</td>
<td>6% sales tax</td>
<td>Subtotal</td>
<td>6% sales tax</td>
</tr>
<tr>
<td>3 shampoos</td>
<td>1.49</td>
<td>Stick Deodorant</td>
<td>99¢</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 creme rinse/conditioners</td>
<td>8 oz. bottle</td>
<td>3 oz. bar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>6% sales tax</td>
<td>Subtotal</td>
<td>6% sales tax</td>
<td>Subtotal</td>
<td>6% sales tax</td>
</tr>
<tr>
<td>4 bars of soap</td>
<td>1.48</td>
<td>Surf</td>
<td>97¢</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouthwash</td>
<td>1.48</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toothpaste</td>
<td>1.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>6% sales tax</td>
<td>Subtotal</td>
<td>6% sales tax</td>
<td>Subtotal</td>
<td>6% sales tax</td>
</tr>
<tr>
<td>Cotton swabs</td>
<td>97¢</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 baby powders</td>
<td>99¢</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 bars of soap</td>
<td>99¢</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>6% sales tax</td>
<td>Subtotal</td>
<td>6% sales tax</td>
<td>Subtotal</td>
<td>6% sales tax</td>
</tr>
</tbody>
</table>
1. Mark bought a motorcycle for $798. What is the amount of sales tax Mark will have to pay if the rate is 6%?

2. Lynne bought a lamp for $79.99 and a chair for $567.97. What is the total purchase price including a 6% sales tax?

3. Susan bought 3 nightshirts at $11.99 each. If the sales tax rate is 7%, how much sales tax would Susan have to pay on the three nightshirts?

4. Sam bought 2 pair of slacks at $29.99 each. The sales tax rate was 5%. What was the total purchase price including tax?

5. Edie bought 5 bags of chips at $2.45 each. What was the total purchase price including a 6 1/2% sales tax? How much change would Edie receive back from a $20 bill?
1. Mike bought a pair of boots for $95. What is the amount of sales tax Mike will have to pay if the rate is 6%?

2. Gloria bought 2 clocks at $49.99 each. What is the total purchase price including a 6% sales tax?

3. Norma bought 3 skirts at $27.97 each. If the sales tax rate is 7%, how much sales tax would Norma have to pay on the 3 skirts?

4. Courtnay bought 1 pair of shoes for $59.99 and another pair for $65.97. The sales tax rate was 5%. What was Courtnay's total purchase price including tax?

5. Kerri bought 2 bags of cookies at $2.19 each, a loaf of bread at $1.29 and a jar of peanut butter at $4.35. What was the total purchase price including a 6 1/2% sales tax?

How much change would Kerri receive back from $20?
Comparison Shopping, Discount, and Sales Tax Review
MLS: 11.2, 11.4, 11.5

1. If the sales tax rate is 4%, how much tax would you pay on a lamp costing $69.49?

2. If blankets that cost $13.50 each are sold for 20% less, how much would you save?

3. David bought a chair costing $169. What is his total cost including a 6% sales tax?

4. Mrs. Green bought a vacuum cleaner for $89.99 and a package of replacement bags for $2.69. Find her total purchase including a 5% sales tax.

5. Joe paid $75 for a rug that regularly sells for $100. Find the rate of discount.

6. Mr. Bullock bought a car for $6900. Find the amount of sales tax that he must pay using 5%.

7. A furniture store advertises 1/4 off all items in the store. What is the sale price of a chair that originally cost $96?

8. Matt bought items costing as follows: $.69, $.89, $1.19, $.45, $.25, and $1.29. Find the total of his purchase including 6% sales tax.

9. Jack bought a cap at 30% off. The cap's original price was $5. Find the total amount that Jack will have to pay including a 4% sales tax.

10. George works in a department store that gives employees a 15% discount on all purchases. If George buys a watch marked $150, what is his discount?

11. Find the sale price of a table whose list price is $800 if it is reduced by 20%.
12. Karen bought a rug for $7.49. Find her total purchase price including a 5% sales tax.


14. Jan bought a sofa listed at $400 at a sale advertising 30% off. If her city has a 4% sales tax, find the total amount she paid for the sofa including tax.

15. A camera listed at $150 was sold at a discount of 15%. What is the amount of savings?

16. At 1/3 off, what is the sale price of a chair that is marked $135?

17. Randy saved $5 on a book marked $15. Find the rate of discount.

18. Find the Florida sales tax on a motorcycle costing $2600.

19. John bought a tennis racket for $59.95. If there is a 6% sales tax, find the total cost including tax.

20. An instrument listed at $500 is on sale at 25% off. Find the total cost including a 5% sales tax.

21. Which is the better buy: 3 bars of soap for $.89 or 4 bars of soap for $1.15?

22. Sharon sells bananas at the price of 3 lbs. for $.56. What is the price for one lb?

23. Fried chicken is priced at 21 pieces for $8.25. A bucket with 16 pieces sells for $6.85. Which is the better buy?

24. One can of tomato juice costs $.12. How much would you save by buying 10 cans for $1?
25. Which is the better buy: 5 lbs. of flour for $.45 or 3 lbs. for $.29?

Determine the better buy of the following:

26. a. 14 oz. can of tomatoes for $.30
    b. 18 oz. can of tomatoes for $.43

27. a. 4 lb. bag of potatoes for $.45
    b. 10 lb. bag of potatoes for $1.18
Comparison Shopping, Discount, and Sales Tax
MLS: 11.2, 11.4, 11.5

1. How much Florida sales tax is there on a pair of shoes costing $25?

2. What is the Florida sales tax on an item costing $17.95?

3. John bought a bicycle for $150. What is the total cost including 4% sales tax?

4. What is the sales tax on $21.95 if the rate is 5%?

5. Sam bought a tire for $25.95 and a muffler for $39.40. If there is a 4% sales tax, how much was his total purchase including tax?

6. Lori bought a coffee pot for $10.90. If there is a 5% sales tax, how much was her total purchase including tax?

7. If the sales tax rate is 3%, how much would your total bill be on a purchase of $64.99?

8. There is a 40% close out sale on all stereo components. How much would you save by buying a $450 amplifier at the reduced price?

9. A store gives a 5% discount on cash sales. If the total bill comes to $10.39, what is the amount saved by paying cash?

10. A store gives a 12% discount on all clothes and a 25% discount on all accessories. What would be the total amount of your discounts on a sweater marked $30 and a $5 belt?

11. A radio cost $60. Jackie bought it on sale for $45. Find the rate of discount.
12. Athletic equipment for the school team lists for $364.29. If a 13% discount is allowed, how much will the school pay for the equipment?

13. Mr. Sameuls received a 12% discount on a radio that had been priced at $80. How much did he pay for the radio?

14. Mr. Kelly bought a shirt that was marked $10 at a 1/5 off sale. How much did he pay for the shirt?

15. Rod sells cherries at 2 pounds for $.85. What is the price of one pound?

16. Which is a better buy - a 12 oz. can of tuna for $1.19 or a 6 oz. can of tuna for $.55?

17. Scott wants to buy 15 gallons of gas. At the full-service pump it costs $1.21 per gallon. At the self-service pump, it costs $1.16 per gallon. How much will Scott save by buying at the self-service pump?

18. A grocer wanted to test his customers' buying habits. On one stack he placed a small sign which said, "8-oz. boxes of soap powder for $.15 a box". The second stack was marked with a large sign that said, "Large economy size, 3 pounds for only $.99". Which is the better buy?

19. Cleanser costs $.17 a can or 4 cans for $.65. How much will you save by buying 8 cans at the cheaper price?

20. A 24 oz. can of vegetable juice costs $.30 while a 36 oz. can of the same brand costs $.45. Which is the better buy?

21. If an item is marked 3/$.95, what is the price of a single item?

22. A bottle of 100 aspirins costs $1.45 while a dozen aspirins cost $.27. How much is saved in the purchase of 300 tablets at the cheaper price?
Determine the better buy of the following:

23. a. three seven oz. cans of tuna fish for $.98
    b. two nine oz. cans of tuna fish for $.79

24. a. five 6 oz. cans of juice for $1
    b. three 12 oz. cans of juice for $1.08

25. a. 3 lbs. of grapes for $1.79
    b. 5 lbs. of grapes for $2
1. Arrange the following numbers from smallest to largest:
   9,768,346  9,786,346  9,876,643  9,786,643

   Round 3,467,059 to the nearest:
   2. thousand
   3. million
   4. hundred

   Round 26.0396 to the nearest:
   5. tenth
   6. thousandth
   7. whole number

   Change the following to fractions:
   8. .5
   9. .38
   10. 3.08

   Do the indicated operations.
   11. $14 \frac{4}{7} + 7 \frac{1}{6}$
   12. $25 - 9 \frac{4}{9}$
   13. $4 \frac{2}{5} \times 10 \frac{1}{2}$
   14. $5 \frac{2}{3} \div 1 \frac{7}{27}$
   15. Find 45% of 99.
   16. What percent of 60 is 45?

   Find the cost of:
   17. 1 can of tomatoes if 2 cans cost $.86
   18. 3 apples if 6 apples cost $.90
   19. 2 jars of pickles if 1 jar cost $.57
   20. 3 cans of fruit juice if 5 cans cost $1.55
   21. 1/2 lb. of cookies if 1 lb. costs $2.34
Find the amount of discount and sale price of each:

<table>
<thead>
<tr>
<th>Item</th>
<th>Regular Price</th>
<th>Discount Rate</th>
<th>Amount of Discount</th>
<th>Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>22. Dress</td>
<td>$16.50</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. TV</td>
<td>$320</td>
<td>33%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Toaster</td>
<td>$35.99</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Find the amount of change and the number of pieces of each denomination to be given back:

<table>
<thead>
<tr>
<th>Amount Received</th>
<th>Amount of sale</th>
<th>Amount of Change</th>
<th>1¢</th>
<th>5¢</th>
<th>10¢</th>
<th>25¢</th>
<th>$1</th>
<th>$5</th>
<th>$10</th>
</tr>
</thead>
<tbody>
<tr>
<td>25. $10.00</td>
<td>$5.26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. $5.00</td>
<td>$0.73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. $20.00</td>
<td>$11.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Find the amount of tax and total cost for each:

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
<th>Tax Rate</th>
<th>Amount of Tax</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>28. shoes</td>
<td>$39.97</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. stereo</td>
<td>$595</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. lamp</td>
<td>$95</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Which is the better buy?

31. a. 3 cans of soup for $.87
    b. 7 cans of soup for $2

32. a. 12 donuts for $2.99
    b. 6 donuts for $1.55

33. a. 20 oz. box of cereal for $2.54
    b. 14 oz. box of cereal for $1.82

34. a. 2 heads of lettuce for $.89
    b. 1 head of lettuce for $.50
35. Ross spent $215 on a suit, $67 on a pair of shoes, and $143 on a coat. Estimate by rounding to the nearest $10 how much he spent altogether.

36. In 10 football games Lance scored 7 touchdowns (6 points each). What is his average points per game?

37. Mike worked 33 1/4 hours last week. He earned $5.10 an hour. What was Mike's total pay?

38. Lynne worked 47 hours last week and earned $6.25 an hour. What was Lynne's total pay?

39. David had pipe pieces the following lengths: 10 1/2 in., 15 3/4 in., and 18 2/3 in. What was the total amount of pipe that David had?

40. Mary has 3 feet of material and needs 5 1/4 feet to make a dress. How much more material does Mary need?
1. Arrange the following numbers from smallest to largest:
   8,678,543  8,768,543  8,876,453  8,768,453

   Round 8,503,941 to the nearest:
   2. thousand
   3. million
   4. hundred

   Round 37.0487 to the nearest:
   5. tenth
   6. thousandth
   7. whole number

   Change the following to fractions:
   8. .3
   9. .54
   10. 5.16

   Do the indicated operations.
   11. 26 5/8 + 13 3/4
   12. 37 - 12 5/6
   13. 6 2/7 \times 4 5/11
   14. 10 1/2 \div 1 1/4
   15. Find 23\% of 85.

   What percent of 24 is 16?

   Find the cost of:
   17. 1 can of corn at 4 for $1.19
   18. 3 cans of beans at 6 for $2.24
   19. 2 cans of peaches at 3 for $1.56
   20. 2 loaves of bread at 1 for $1.29
   21. 1/2 lb. of cookies at $3.50 a lb.
Find the amount of discount and sale price of each:

<table>
<thead>
<tr>
<th>Item</th>
<th>Regular Price</th>
<th>Discount Rate</th>
<th>Amount of Discount</th>
<th>Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>22.</td>
<td>Dress $59.00</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>VCR $350</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Jacket $72.50</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Find the amount of change and the number of pieces of each denomination to be given back:

<table>
<thead>
<tr>
<th>Amount Received</th>
<th>Amount of Sale</th>
<th>Amount of Change</th>
<th>1¢</th>
<th>5¢</th>
<th>10¢</th>
<th>25¢</th>
<th>$1</th>
<th>$5</th>
<th>$10</th>
</tr>
</thead>
<tbody>
<tr>
<td>25. $10.00</td>
<td>$6.37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. $5.00</td>
<td>$1.46</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. $20.00</td>
<td>$8.21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Find the amount of tax and total cost for each:

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
<th>Tax Rate</th>
<th>Amount of Tax</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.</td>
<td>shoes</td>
<td>$43.55</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>TV</td>
<td>$229</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>table</td>
<td>$115</td>
<td>7%</td>
<td></td>
</tr>
</tbody>
</table>

Which is the better buy?

31. a. 2 pkg. of popcorn for $.89  
    b. 6 pkg. of popcorn for $1.97

32. a. 1 tape for $3.97  
    b. 3 tapes for $10.59

33. a. 8 oz. pkg. of potato chips for $1.29  
    b. 12 oz. pkg. of potato chips for $1.89

34. a. 6 cans of coke for $1.99  
    b. 12 cans of coke for $3.19

OVER
35. Ms. Watson earns $1565 a month. Estimate by rounding to the nearest hundred what Ms. Watson's annual salary is.

36. The total attendance at the Bartram Jr. High School for the 21 school days in March was 19,467. Find the average daily attendance.

37. Steve worked 36 1/2 hours last week. He earned $4.80 an hour. What was Steve's total pay?

38. Leesa worked 43 hours last week and earned $5.10 an hour. What was Leesa's total pay?

39. Leslie had ribbon pieces the following lengths: 15 1/4 in., 12 1/8 in, and 8 2/3 in. What was the total amount of ribbon that Leslie had?

40. Dean has 13 feet of wood and needs 33 1/2 feet to make some shelves. How much more wood does Dean need?
Chapter 8
Interest Formulas. The principal multiplied by the rate gives the interest for one year.

Principal \times \text{Rate} = \text{Interest for 1 year}

Interest for a period other than one year is found by multiplying the interest for 1 year by the time in years.

Principal \times \text{Rate} \times \text{Time} = \text{Interest}

\[ P \times R \times T = I \]

In this way, the interest on $1,000 at 6\% for 3 years is $180;
\[ 1,000 \times 0.06 \times 3 = 60 \times 3 = 180 \]

For 1/2 of a year, the interest would be $30;
\[ 1,000 \times 0.06 \times 1/2 = 60 \times 1/2 = 30 \]

Find the interest on the following: SHOW ALL WORK ON YOUR PAPER!

1. $500 @ 6\% for 1 yr. 
2. $100 @ 6\% for 4 yrs. 
3. $300 @ 6\% for 1/2 yr. 
4. $200 @ 6\% for 1 1/2 yrs. 
5. $400 @ 6\% for 1/4 yr. 
6. $700 @ 8\% for 1 yr. 
7. $300 @ 7\% for 2 yrs. 
8. $200 @ 13\% for 2 yrs. 
9. $1500 @ 11\% for 3 yrs. 
10. $2000 @ 9\% for 5 yrs.

OVER
11. Find the interest Mrs. Dupont owes if she borrows $730 on her life insurance policy at 6% for 2 years.

12. Mr. Sanchez owns a $1,000 bond bearing 7.95% interest. How much interest does he receive every 6 months?

13. Les invested $2,500 in a savings account. How much interest will he receive after 2 years at 8% interest? What will be the total amount in Les's savings account at the end of the two years?

14. Karen borrowed $1,575 at 11% for 1 1/2 years. How much interest will Karen owe? What will be the total amount that Karen will owe?
Interest - Months
MLS: 11.3

Interest for Time in Months. When the time of a note is in months, you show it as a common fraction with the denominator 12. For example, 3 months is 3/12 or 1/4 of a year. So, the interest on $500 at 8% for 3 months would be:

$500 \times 0.08 \times \frac{1}{4} = $40 \times \frac{1}{4} = $10 \text{ interest for 3 months}

Find the interest on the following:

1. $300 @ 6\% \text{ for 6 months} \\
2. $600 @ 8\% \text{ for 3 months} \\
3. $900 @ 5\% \text{ for 4 months} \\
4. $400 @ 9\% \text{ for 9 months} \\
5. $750 @ 4\% \text{ for 5 months} \\
6. $1,200 @ 7\% \text{ for 2 months} \\
7. $3,450 @ 10\% \text{ for 8 months} \\
8. $2,400 @ 8\% \text{ for 1 month} \\
9. $1,500 @ 6\% \text{ for 10 months} \\
10. $2,000 @ 8 1/2\% \text{ for 6 months} \\

11. In order to pay a hospital bill, Linda Russell borrowed $1,200 at 6\% from a business partner. She repaid the loan 8 months later. How much interest did Linda have to pay?

12. To pay her taxes on time and avoid a penalty, Joyce Bell borrowed $800 on a 9 month note bearing interest at 8 1/2\%. How much interest did Joyce have to pay?

13. To buy tools for his auto repair shop, Ned Aldo borrowed $400 for 4 months at 11\% interest. How much interest did Ned owe?

What was the total amount Ned had to pay back?
14. James Burke borrowed $1,750 from his aunt to buy a used car to drive to work. The note James gave to his aunt was for 3 years and bore 9% interest. How much interest did James owe?

What was the total amount James had to pay his aunt?
Simple Interest
MLS: 11.3

Find the interest on the following: SHOW ALL WORK ON YOUR PAPER!

1. $200 @ 15% for 1 yr. 
2. $2,800 @ 10.25% for 1 yr. 
3. $1,450 @ 14% for 8 yrs. 
4. $2,000 @ 9 3/4% for 6 yrs. 
5. $900 @ 10% for 7 yrs. 
6. $1,600 @ 11% for 2 1/4 yrs. 
7. $500 @ 15% for 1 1/2 yrs. 
8. $400 @ 8% for 3 yrs. 
9. $2,100 @ 6.5% for 4 yrs. 
10. $350 @ 9 1/2% for 5 1/2 yrs. 

11. $700 @ 11% for 3 months 
12. $4,800 @ 9% for 11 months 
13. $760 @ 9% for 6 months 
14. $750 @ 8% for 2 months 
15. $700 @ 6% for 10 months
Banker's Interest for Time in Days. Banker's or ordinary interest is used by some banks and other businesses. In this method of figuring interest, a year has only 360 days. The 360-day year has 12 months of 30 days each and is known as the commercial year or banker's year. Of course, there really is no such year. It is used because it is easier to figure with than a 365-day year.

You will use a 360-day year for all further interest problems unless you are told otherwise.

Using this method, the interest for 30 days is 30/360, or 1/12, of the interest for 1 year. The interest for 60 days is 60/360, or 1/6 of the interest for 1 year, and so on.

For example, 72 days is 72/360, or 1/5 of a year. So, the interest on $1,000 at 6% for 72 days would be

\[
\frac{1,000 \times 0.06 \times 1/5}{1/5} = $60 \times 1/5 = $12 \text{ interest for 72 days.}
\]

Find the interest on the following: SHOW ALL WORK ON YOUR PAPER!

1. $300 @ 6% for 60 days
2. $600 @ 8% for 90 days
3. $900 @ 5% for 120 days
4. $400 @ 9% for 180 days
5. $750 @ 4% for 270 days
6. $1,200 @ 7% for 36 days
7. $3,450 @ 10% for 240 days
8. $2,400 @ 8% for 20 days
9. $1,500 @ 6% for 45 days
10. $2,000 @ 8 1/2% for 300 days
11. Find the banker's interest on a loan of $450 at 8% for 60 days.
12. Kitty James borrowed $960 from a bank for 120 days. She paid banker's interest at an annual rate of 9%. How much interest did she pay on the loan?
13. Kent Goldstone signed a 180-day note for $3,650 at the Pontiac National Bank. Interest was charged at the annual rate of 8%. He paid the note with interest on the due date.
   (a) How much interest did he pay?
   (b) What total amount did he pay?

14. Adam Shuler needed a short-term loan of $650 to pay his taxes. His credit was good, so his bank loaned him the money. They required him to sign a note, with interest at 8 1/2%. If he repaid the loan in 90 days, how much interest did he have to pay?

15. Bill Lally borrowed $1,000 at 5% for 180 days from the student loan program at his college. How much interest did Bill have to pay on the loan?

16. Karen Dorman borrowed $3,000 for 270 days. She paid interest at an annual rate of 8%.
   (a) What amount of interest did she have to pay?
   (b) What total amount did she have to repay?
Interest Review  
MLS: 11.3  

Find the interest on the following: SHOW ALL WORK ON YOUR PAPER!

<table>
<thead>
<tr>
<th>(P)Principal</th>
<th>(R)Rate</th>
<th>(T)Time</th>
<th>(I)Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>$500</td>
<td>10%</td>
<td>90 days</td>
<td></td>
</tr>
<tr>
<td>$5,000</td>
<td>9%</td>
<td>180 days</td>
<td></td>
</tr>
<tr>
<td>$7,000</td>
<td>6%</td>
<td>30 days</td>
<td></td>
</tr>
<tr>
<td>$2,000</td>
<td>12%</td>
<td>240 days</td>
<td></td>
</tr>
<tr>
<td>$10,000</td>
<td>6%</td>
<td>300 days</td>
<td></td>
</tr>
<tr>
<td>$8,000</td>
<td>5%</td>
<td>120 days</td>
<td></td>
</tr>
<tr>
<td>$500</td>
<td>10%</td>
<td>2 yrs.</td>
<td></td>
</tr>
<tr>
<td>$800</td>
<td>9%</td>
<td>3 yrs.</td>
<td></td>
</tr>
<tr>
<td>$1,000</td>
<td>10%</td>
<td>1 1/2 yrs.</td>
<td></td>
</tr>
<tr>
<td>$2,000</td>
<td>12%</td>
<td>1/2 yr.</td>
<td></td>
</tr>
<tr>
<td>$5,000</td>
<td>12%</td>
<td>6 yrs.</td>
<td></td>
</tr>
<tr>
<td>$1,000</td>
<td>15%</td>
<td>2 yrs.</td>
<td></td>
</tr>
<tr>
<td>$5,000</td>
<td>11%</td>
<td>6 mo.</td>
<td></td>
</tr>
<tr>
<td>$1,000</td>
<td>10%</td>
<td>9 mo.</td>
<td></td>
</tr>
<tr>
<td>$4,000</td>
<td>9%</td>
<td>3 mo.</td>
<td></td>
</tr>
<tr>
<td>$3,000</td>
<td>6%</td>
<td>10 mo.</td>
<td></td>
</tr>
</tbody>
</table>
General Math II
Quiz #1

Simple Interest
MLS: 11.3

Find the interest on the following: SHOW ALL WORK!

1. $300 @ 14% for 1 year

2. $725 @ 9 1/2% for 4 years

3. $3,000 @ 6% for 6 months

4. $1,500 @ 5% for 9 months

5. $5,000 @ 8% for 5 1/2 years
Find the interest on the following: SHOW ALL WORK!

1. $2,500 at 6% for 3 years

2. $2,000 at 7 1/2% for 1 year

3. $400 at 9% for 9 months

4. $1,200 @ 7% for 2 months

5. $1,400 @ 10% for 180 days
SHOW ALL WORK FOR ENTIRE TEST!

Find the interest on each:

1. $800 @ 12% for 1 year
2. $1,500 @ 9% for 3 years
3. $2,000 @ 8% for 1 1/2 years
4. $600 @ 15% for 9 months
5. $1,200 @ 10% for 6 months
6. $900 @ 12% for 10 months
7. $1,200 @ 10% for 120 days
8. $1,000 @ 12% for 180 days

Find the cost of each:

9. 1 can of peaches at 3 for $1.29
10. 4 cans of tuna at 2 for $.59
11. 2 cans of beans at 3 for $.79
12. 3 1/2 lbs. of hamburger at $1.19 a lb.

Which is the better buy?

13. (a) 6 pkg. of popcorn for $1.96
(b) 2 pkg. of popcorn for $.77

14. (a) 5 lb. bag of sugar for $1.29
(b) 10 lb. bag of sugar for $2.45

Find the amount of discount and sale price for each:

<table>
<thead>
<tr>
<th>Item</th>
<th>Regular Price</th>
<th>Rate of Discount</th>
<th>Amount of Discount</th>
<th>Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. Shirt</td>
<td>$24.99</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Dryer</td>
<td>$459.97</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OVER
Find the amount of change and the number of pieces of each denomination to be given back.

<table>
<thead>
<tr>
<th>Amount Received</th>
<th>Amount of Sale</th>
<th>Amount of Change</th>
<th>1¢</th>
<th>5¢</th>
<th>10¢</th>
<th>25¢</th>
<th>$1</th>
<th>$5</th>
<th>$10</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. $10.00</td>
<td>$ 5.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. $20.00</td>
<td>$11.43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Find the sales tax and total purchase price of each:

<table>
<thead>
<tr>
<th>Price</th>
<th>Sales Tax Rate</th>
<th>Amount of Sales Tax</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>19. $54.50</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. $137.24</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. $69.20</td>
<td>6 1/2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

22. Leesa worked 35 hours last week. She earned $4.40 an hour. What was Leesa's gross pay?

23. Jenni worked 48 hours last week and earned $4.90 an hour. What was her gross pay?

24. Arrange the following numbers from smallest to largest:

13,965,783 13,956,873 13,695,873 13,695,738

Round 9,608,713 to the nearest:

25. ten thousand

26. million

27. hundred

Round 34.5068 to the nearest:

28. whole number

29. tenth

30. hundredth

OVER
31. A service club planted 488 flower plants. If there are 21 club numbers, estimate by rounding to the nearest 10, the number of plants each member planted.

32. Find the average daily attendance at school if 1,703 were present on Monday; 1,695, Tuesday; 1,751, Wednesday; 1,776, Thursday; and 1,674, Friday.

Do the indicated operations.

33. $27 \frac{5}{6} + 19 \frac{1}{4}$

34. $36 \frac{1}{5} - 12 \frac{2}{7}$

35. $18 \times 9 \frac{3}{4}$

36. $27 \div 18 \frac{25}{25}$

37. $257 - 53.07$

38. $4.07 \times 13.8$

39. $50.70 \div .15$

40. Find 46% of 84.
General Math II
Interest Test B

SHOW ALL WORK FOR ENTIRE TEST!

Find the interest on each:
1. $900 @ 7% for 1 year
2. $1,600 @ 8% for 2 years
3. $3,000 @ 6% for 2 1/2 years
4. $800 @ 12% for 9 months
5. $1,000 @ 11% for 6 months
6. $500 @ 15% for 10 months
7. $500 @ 12% for 90 days
8. $300 @ 10% for 60 days

Find the cost of each:
9. 1 grapefruit at 5 for $.89
10. 6 candy bars at 3 for $1.00
11. 2 notepads at 3 for $1.29
12. 2 1/4 lbs. of chicken at $1.59 a lb.

Which is the better buy?
13. (a) 32 oz. bottle of catsup at $1.49
    (b) 28 oz. bottle of catsup at $1.25
14. (a) 5 lb. box of Tide for $3.72
    (b) 10 lb. box of Tide for $7.26

Find the amount of discount and sale price for each:

<table>
<thead>
<tr>
<th>Item</th>
<th>Regular Price</th>
<th>Rate of Discount</th>
<th>Amount of Discount</th>
<th>Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. Dress</td>
<td>$89.95</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. VCR</td>
<td>$349.97</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OVER
Find the amount of change and the least number of pieces of each denomination to be given back.

<table>
<thead>
<tr>
<th>Amount Received</th>
<th>Amount of Sale</th>
<th>Amount of Change</th>
<th>1¢</th>
<th>5¢</th>
<th>10¢</th>
<th>25¢</th>
<th>$1</th>
<th>$5</th>
<th>$10</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. $15.00</td>
<td>$10.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. $30.00</td>
<td>$23.13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Find the sales tax and total purchase price of each:

<table>
<thead>
<tr>
<th>Price</th>
<th>Sales Tax Rate</th>
<th>Amount of Sales Tax</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>19. $69.87</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. $213.56</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. $89.55</td>
<td>5 1/2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

22. Frank worked 33 hours last week. He earned $4.60 an hour. What was Frank's gross pay?

23. Chuck worked 50 hours last week and earned $6.10 an hour. What was his gross pay?

24. Arrange the following numbers from smallest to largest:

25.796,452 25,796,542 25,697,452 25,697,542

Round 13,939,651 to the nearest:

25. hundred thousand

26. million

27. ten

Round 27.1673 to the nearest:

28. whole number

29. tenth

30. hundredth

OVER
31. An orange grove had 131 rows of trees with 52 trees in each row. Estimate by rounding to the nearest 10 how many trees were in the grove.

32. The temperatures in Jacksonville for the past 5 days were 89°, 93°, 97°, 94°, and 95°. Find the average temperature for the five days.

Do the indicated operations.

33. 55 1/2 + 23 4/9

34. 28 1/4 - 14 2/5

35. 12 2/3 x 27

36. 4 2/5 ÷ 11

37. $169 - $47.89

38. 51.6 x 3.09

39. 49.13 ÷ 1.7

40. Find 3.4% of 96.
Chapter 9
The ruler below measures centimeters and millimeters.

Centimeters: Each numbered space stands for 1 centimeter. There are 10 smaller spaces between each pair of numbers.

Millimeters: Each small space stands for 1 millimeter. 10 millimeters equal 1 centimeter.

Write the measurement of the arrow at each letter in centimeters.

1. A is ______ 2. B is ______ 3. C is ______ 4. D is ______
5. E is ______ 6. F is ______ 7. G is ______ 8. H is ______

Write the measurement of the arrow at each letter in millimeters.

9. J is ______ 10. K is ______ 11. L is ______ 12. M is ______
13. N is ______ 14. O is ______ 15. P is ______ 16. Q is ______

Use a metric ruler to draw lines having these lengths.

17. 1 centimeter 18. 10 millimeters
19. 42 millimeters
20. 9 centimeters
Find each missing number.

1. 6 km = _________ m
2. 48 m = _________ cm
3. 864 mm = _________ cm
4. 4.2 m = _________ km
5. 6.4 cm = _________ m
6. 884 cm = _________ mm
7. 86 mm = _________ m
8. 54 g = _________ cg
9. 86 kg = _________ g
10. 8487 g = _________ kg
11. 52 cg = _________ mg
12. 164 cg = _________ g
13. 48 mg = _________ cg
14. 72 L = _________ mL
15. 964 g = _________ mg
16. 787 m = _________ mm
17. 792 mL = _________ L
18. 649 mg = _________ g
19. 4.8 km = _________ m
20. 8495 g = _________ kg
21. 24 mL = _________ L
22. 83 mm = _________ m
23. 63 m = _________ cm
24. 7805 mg = _________ g
25. 85 g = _________ mg
26. 9842 m = _________ km
27. 4.2 cm = _________ m
28. 85 L = _________ mL
29. 48 kg = _________ g
30. 19 cm = _________ mm
31. 74.6 mm = _________ cm
32. 75.4 m = _________ mm
Metric Measurement
MLS: 13.9 & 13.11

The ruler below measures centimeters and millimeters.

Centimeters: Each numbered space stands for 1 centimeter. There are 10 smaller spaces between each pair of numbers.

Millimeters: Each small space stands for 1 millimeter. 10 millimeters equal 1 centimeter.

Write the measurement of the arrow at each letter in centimeters.

1. A is _____ 2. B is _____ 3. C is _____
4. D is _____ 5. E is _____ 6. F is _____

Write the measurement of the arrow at each letter in millimeters.

7. G is _____ 8. H is _____ 9. I is _____
10. J is _____ 11. K is _____ 12. L is _____

OVER
Use a metric ruler to draw lines having these lengths.

13. 2 centimeters
14. 53 millimeters
15. 7 centimeters
16. 22 millimeters

In each pair of measurements below, draw a ring around the measurement for the greater length.

17. 3 km; 3 dm  
18. 4 dm; 4 cm  
19. 2 km; 2 mm
20. 7 dm; 7 mm  
21. 6 km; 6 cm  
22. 10 mm; 10 cm

Complete the following:

23. $1 \text{ m} = \underline{\text{______}} \text{ cm}$  
24. $1 \text{ m} = \underline{\text{______}} \text{ mm}$
25. $1 \text{ m} = \underline{\text{______}} \text{ dm}$  
26. $0.01 \text{ m} = \underline{\text{______}} \text{ cm}$
27. $0.001 \text{ m} = \underline{\text{______}} \text{ mm}$  
28. $0.1 \text{ m} = \underline{\text{______}} \text{ dm}$
29. $1000 \text{ m} = \underline{\text{______}} \text{ km}$  
30. $1 \text{ m} = \underline{\text{______}} \text{ km}$
31. $49 \text{ mm} = \underline{\text{______}} \text{ m}$  
32. $45 \text{ cm} = \underline{\text{______}} \text{ mm}$
33. $785 \text{ mm} = \underline{\text{______}} \text{ dm}$  
34. $4.35 \text{ dm} = \underline{\text{______}} \text{ mm}$
35. $875 \text{ mm} = \underline{\text{______}} \text{ m}$  
36. $8.7 \text{ m} = \underline{\text{______}} \text{ mm}$
37. $8.9 \text{ dm} = \underline{\text{______}} \text{ cm}$  
38. $75 \text{ cm} = \underline{\text{______}} \text{ dm}$
39. $67 \text{ m} = \underline{\text{______}} \text{ cm}$  
40. $937 \text{ cm} = \underline{\text{______}} \text{ m}$
41. $735 \text{ dm} = \underline{\text{______}} \text{ m}$  
42. $95 \text{ m} = \underline{\text{______}} \text{ dm}$
43. $108 \text{ m} = \underline{\text{______}} \text{ km}$  
44. $7.3 \text{ km} = \underline{\text{______}} \text{ m}$
45. $9.3 \text{ m} = \underline{\text{______}} \text{ cm}$  
46. $6.48 \text{ mm} = \underline{\text{______}} \text{ cm}$
47. $4.73 \text{ dm} = \underline{\text{______}} \text{ mm}$  
48. $73.4 \text{ mm} = \underline{\text{______}} \text{ m}$
49. $879.\text{ cm} = \underline{\text{______}} \text{ dm}$  
50. $9.73 \text{ dm} = \underline{\text{______}} \text{ m}$
General Math II
Quiz #1

Metric Measurement
MLS: 13.9 & 13.11

Complete the following:

1. 13 m = ______ cm.
2. 2.5 cl = ______ l
3. 1,405 km = ______ m
4. 957 dg = ______ g
5. 7.6 cg = ______ mg
6. 1,400 mm = ______ m
7. 57 l = ______ kl

Circle the correct answer.

8. Which is larger? 1 kl or 1 l
9. Which is smaller? 1 cm or 1 mm
10. The metric unit for length is the ________.
General Math II
Quiz #2

Metric Measurement
MLS: 13.9 & 13.11

Complete the following:
1. 27 cm = _____ m
2. 3.8 l = _____ cl
3. 248 m = _____ km
4. 7.8 g = _____ dg
5. 865 mg = _____ cg
6. 34.9 m = _____ mm
7. 9 kl = _____ l

Circle the correct answer.
8. Which is larger? 25 m or 25 cm
9. Which is smaller? 16 g or 16 mg

10. The metric unit for volume is the _________.

Name ______________________
Date ______________________
1. The metric unit of length is the ________.
2. The metric unit of weight is the ________.
3. The metric unit of volume is the ________.

Write the name that each symbol represents.

4. m
5. l
6. g
7. mg
8. dl
9. dkg

Complete the following:

10. 85 mm = ____ cm
11. 4.7 km = ____ m
12. 375 g = ____ kg
13. 15.6 cg = ____ mg
14. 10.4 l = ____ cl
15. 392 ml = ____ dl
16. 48 cm = ____ mm
17. 23,900 m = ____ km
18. 821 g = ____ mg
19. 34,000 mg = ____ kg
20. .3 cl = ____ ml
21. 23.09 l = ____ kl
22. 5 m = ____ hm

OVER
Use a metric ruler to draw lines having these lengths.

23. 5 cm
24. 17 mm

In each pair of measurements below, tell which one is the larger measurement.

25. 5 km or 5 dm
26. 7 kg or 7 mg
27. 10 cm or 10 mm
28. 25 cl or 25 l

Do the indicated operations.

29. 4.7 + 53.98 + 34
30. 15 - 4.56
31. 3.4 x .017
32. 19.55 ÷ .5
33. 14 3/4 + 22 1/8
34. 35 - 19 2/5
35. 5 1/3 x 27
36. 10 ÷ 2 2/5
37. Change .7 to a fraction
38. Change .49 to a fraction
39. Find 40% of 95.
40. 20.7 is what percent of 90?
General Math II
Metric Measurement Test B

Name __________________________
Date __________________________

1. The metric unit of length is the ____________________.
2. The metric unit of weight is the ____________________.
3. The metric unit of volume is the ____________________.

Write the name that each symbol represents.

4. m
5. l
6. g
7. cl
8. mm
9. kg

Complete the following:

10. 79 mm = _____ cm
11. 3.8 km = _____ m
12. 433 g = _____ kg
13. 23.7 cg = _____ mg
14. 65.9 l = _____ cl
15. 561 ml = _____ dl
16. 96 cm = _____ mm
17. 25,750 m = _____ km
18. 732 g = _____ mg
19. 5,670 mg = _____ kg
20. 7.6 cl = _____ ml
21. 47.12 l = _____ kl
22. 9 m = _____ hm

OVER
Use a metric ruler to draw lines having these lengths.

23.  8 cm

24.  23 mm

In each pair of measurements below, tell which one is the larger measurement.

25.  7 km or 7 dm

26.  3 kg or 3 mg

27.  25 cm or 25 mm

28.  17 cl or 17 l

Do the indicated operations.

29.  3.4 + 47.13 + 15

30.  27 - 3.44

31.  1.7 x .024

32.  34.65 ÷ .5

33.  21 2/3 + 17 2/5

34.  31 - 22 3/7

35.  6 3/4 x 32

36.  15 ÷ 3 5/6

37.  Change .3 to a fraction

38.  Change .67 to a fraction

39.  Find 60% of 36.

40.  25.84 is what percent of 76?
Chapter 10
Complete the following:

**Length**
1. 1 ft. = ___ in.
2. 1 yd. = ___ ft.
3. 1 yd. = ___ in.
4. 1 mi. = ___ ft.

**Weight**
5. 1 lb. = ___ oz.
6. 1 ton = ___ lbs.

**Liquid Measure**
7. 1 cup = _______ oz.
8. 1 pt. = _______ cups = _______ oz.
9. 1 qt. = _______ pt. = _______ cups = _______ oz.
10. 1 gal = _______ qt. = _______ pt. = _______ oz.

Find the number of ounces in each:
11. 9 pt.
12. 5 1/2 pt.
13. 5 qt.
14. 4/5 qt.
15. 7 gal.
16. 39 gal.
17. 2 pt. 8 oz.

Find the number of pints in each:
18. 3 qt.
19. 4 1/4 qt.
20. 6 gal.
21. 7 1/2 gal.
22. 5 qt. 1 pt.
23. 9 qt. 2 pt.
24. 48 oz.
25. 256 oz.
Liquid Measure. Complete.

26. 8 gal. = ____ qt.
27. 17 1/2 gal. = ____ qt.
29. 1 gal. 2 qt. = ____ qt.
30. 27 pt. = ____ qt.
31. 4 cups = ____ oz.
32. 64 oz. = ____ cups
33. 8 cups = ____ pt.
34. 20 qt. = ____ gal.
35. 24 pt. = ____ gal.

Weight. Complete.

36. 6 lbs. = ____ oz.
37. 5 3/4 lbs. = oz.
38. 1 lb. 2 oz. = ____ oz.
39. 7 tons = ____ lbs.
40. 4 1/2 T = ____ lbs.
41. 64 oz. = ____ lbs.
42. 6,000 = ____ T

Length. Complete.

43. 8 ft. = ____ in.
44. 3 1/2 ft. = ____ in.
45. 9 yd. = ____ in.
46. 5 ft. 7 in. = ____ in.
47. 6 yd. = ____ ft.
48. 8 mi. = ____ ft.
49. 192 in. = ____ ft.
50. 5 yd. 2 ft. = ___ ft. 

51. 15,840 ft. = ___ mi.

52. 57 ft. = ___ yd.

53. 180 in. = ___ yd.

Time. Complete.

54. 1 min. = ___ sec.

55. 1 hr. = ___ min.

56. 1 day. = ___ hrs.

57. 1 week = ___ days

58. 1 week = ___ hrs.

59. 1 year = ___ days

60. 1 year = ___ months

61. 5 1/2 min. = ___ sec.

62. 2 min. 14 sec. = ___ sec.

63. 3 hr. 40 min. = ___ min.

64. 3 1/2 hr. = ___ min.

65. 72 min. = ___ hr.

66. 36 months = ___ yr.

67. 96 hr. = ___ days

68. 5 hr. 16 min. = ___ min.

69. 1,140 sec. = ___ min.

70. 3 days = ___ hr.
Complete the following:
1. 1 ft. = ____ in.
2. 1 yd. = ____ ft.
3. 1 yd. = ____ in.
4. 1 mi. = ____ ft.
5. 1 lb. = ____ oz.
6. 1 ton = ____ lbs.
7. 1 cup = ____ oz.
8. 1 pt. = ____ cups
9. 1 qt. = ____ pt.
10. 1 gal. = ____ qt.
11. 7 pt. = ____ oz.
12. 6 1/2 pt. ____ oz.
13. 8 qt. = ____ oz.
14. 3 gal. = ____ oz.
15. 4 pt. 10 oz. = ____ oz.
16. 5 qt. = ____ pt.
17. 6 1/2 qt. = ____ pt.
18. 5 gal. = ____ pt.
19. 3 qt. 2 pt. = ____ pt.
20. 64 oz. = ____ pt.
21. 48 in. = ____ ft.
22. 5 ft. 4 in. ____ in.
23. 7 ft. = ____ in.
24. 6 yd. 1 ft. = ____ ft.  
25. 42 ft. = ____ yd.  
26. 2 yd. 9 in. = ____ in.  
27. 5 yd. = ____ ft.  
28. 72 in. = ____ yd.  
29. 5 yd. 2 ft. = ____ ft.  
30. 6 yd. 5 in. = ____ in.  
31. 48 oz. = ____ lb.  
32. 15 qt. = ____ gal.  
33. 5 gal. 3 qt. = ____ qt.  
34. 3 qt. 1 pt. = ____ pt.  
35. 6 pt. = ____ qt.  
36. 6 lb. 5 oz. = ____ oz.  
37. 12,000 lbs = ____ T  
38. 4 T = ____ lbs.  
39. 6 1/2 ft. = ____ in.  
40. 8 1/2 lb. = ____ oz.  
41. 2 min. = ____ sec.  
42. 3 hr. = ____ min.  
43. 5 days = ____ hrs.  
44. 4 weeks = ____ days  
45. 2 weeks = ____ hrs.  
46. 3 years = ____ days  
47. 6 years = ____ months  
48. 3 inches are what part of a foot?  
49. 6 inches are what part of a yard?  
50. 16 hours are what part of a day?
Complete the following:

1. 2 ft. = _________ in.
2. 48 in. = _________ ft.
3. 12 ft. = _________ yds.
4. 5 yds. = _________ in.
5. 4 lbs. = _________ oz.
6. 6,000 lbs. = _________ tons
7. 3 cups = _________ oz.
8. 6 cups = _________ pts.
9. 64 oz. = _________ lbs.
10. 3 yds. = _________ ft.
11. 5 hrs. = _________ sec.
12. 7 days = _________ hrs.
Complete the following:

1. 3 ft. = _________ in.
2. 60 in. = _________ ft.
3. 15 ft. = _________ yds.
4. 6 yds. = _________ in.
5. 5 lbs. = _________ oz.
6. 10,000 lbs. = _________ tons
7. 5 cups = _________ oz.
8. 4 cups = _________ pts.
9. 80 oz. = _________ lbs.
10. 4 yds. = _________ ft.
11. 3 hrs. = _________ sec.
12. 4 days = _________ hrs.
1 pt. = 2 cups  
1 qt. = 2 pts.  
1 gal. = 4 qts.

Complete the following:

1. 1 ft. = ________ in.
2. 1 yd. = ________ ft.
3. 1 yd. = ________ in.
4. 1 lb. = ________ oz.
5. 1 cup = ________ oz.
6. 11 ft. = ________ in.
7. 276 in. = ________ ft.
8. 5 yds. = ________ ft.
9. 7 yds. = ________ in.
10. 108 in. = ________ yds.
11. 42 ft. = ________ yds.
12. 3 mi. = ________ ft.
13. 10,560 ft. = ________ mi.
14. 5 T = ________ lbs.
15. 12,000 lbs. = ________ T
16. 2 cups = ________ oz.
17. 4 pts. = ________ cups
18. 5 qts. = ________ pts.
19. 3 gal. = ________ qt.
20. 72 oz. = ________ cups
21. 16 qt. = ________ gal.
22. 8 pt. = ________ qt.
23. 10 cups = ________ pt.
24. 32 oz. = ________ qt.
25. 8 pt. = ________ gal.
26. 1 min. = ________ sec.
27. 1 hour = ________ min.
28. 1 day = ________ hours
29. 1 week = ________ days
30. 1 year = ________ days
31. 1 year = ________ months
32. 7 weeks = ________ days
33. 264 hours = ________ days
34. 9 inches are what part of a foot? ____________
35. 18 inches are what part of a yard? ____________
36. 8 hours are what part of a day? ____________
37. 3 months are what part of a year? ____________
38. 48 cm = ________ mm
39. 154 L = ________ cl
40. 5 kg = ________ g
41. 167 mm = ________ m
42. 15 d1 = ________ L
43. 3 km = ________ cm
44. 4.8 g = ________ kg
45. 14 hm = ________ m

Do the indicated operations.
46. $15 \frac{2}{3} + 8 \frac{5}{6}$
47. $33 - 12 \frac{5}{9}$
48. $3.9 \times 0.012$
49. $34 \div 1.36$
General Math II
Customary Measurement Test B
MLS: 13.9 & 13.11

1 pt. = 2 cups 1 qt. = 2 pts. 1 gal. = 4 qts.

Complete the following:

1. 1 ft. = __________ in.
2. 1 yd. = __________ ft.
3. 1 yd. = __________ in.
4. 1 lb. = __________ oz.
5. 1 cup = __________ oz.
6. 23 ft. = __________ in.
7. 156 in. = __________ ft.
8. 9 yds. = __________ ft.
9. 3 yds. = __________ in.
10. 180 in. = __________ yds.
11. 27 ft. = __________ yds.
12. 2 mi. = __________ yds.
13. 5,280 ft. = __________ mi.
14. 3 T = __________ lbs.
15. 6,000 lbs. = __________ T
16. 4 cups = __________ oz.
17. 8 pts. = __________ cups
18. 8 qts. = __________ pts.
19. 5 gal. = __________ qt.
20. 88 oz. = __________ cups
21. 20 qt. = __________ gal.
22. 10 pt. = __________ qt.
23. 14 cups = __________ pt.
24. 64 oz. = ________ qt.
25. 16 pt. = ________ gal.
26. 1 min. = ________ sec.
27. 1 hour = ________ min.
28. 1 day = ________ hours
29. 1 week = ________ days
30. 1 year = ________ days
31. 1 year = ________ months
32. 9 weeks = ________ days
33. 144 hours = ________ days
34. 4 inches are what part of a foot? ________
35. 24 inches are what part of a yard? ________
36. 6 hours are what part of a day? ________
37. 9 months are what part of a year? ________
38. 53 cm = ________ mm
39. 231 L = ________ cl
40. 7 kg = ________ g
41. 345 mm = ________ m
42. 65 dl = ________ L
43. 8 km = ________ cm
44. 1.3 g = ________ kg
45. 55 hm = ________ m

Do the indicated operations.
46. 21 3/4 + 5 3/8 ________
47. 12 - 4/7 ________
48. .42 x 3.22 ________
49. 12 ÷ .15 ________
EXAMPLE: The departure time on a flight from New York to Miami was 11:20 am. If the flight took 2 hours 25 minutes, what was the arrival time in Miami?

SOLUTION: First add the hours to the departure time. Remember that the first hour after 12:00 noon is 1:00 pm.

11:20 am + 2 hours = 1:20 pm
Then add the minutes:
1:20 pm + 25 minutes = 1:45 pm
The arrival time was 1:45 pm.

EXAMPLE: Mr. Bedoni left St. Louis at 10:30 am and drove to Chicago. He arrived in Chicago at 5:15 pm. How long did Mr. Bedoni drive?

SOLUTION: First find the number of hours. Remember that the first hour after 12:00 noon is 1:00 pm.
10:30 am to 4:30 pm = 6 hours
Then find the number of minutes remaining.
4:30 pm to 5:15 pm = 45 minutes
Mr. Bedoni drove 6 hours 45 minutes.

1. 3 hours 15 minutes + 5 hours 20 minutes

2. 2 hours 35 minutes + 7 hours 50 minutes

3. Add 3 hours 20 minutes to 8:15 am.

4. Add 6 hours 5 minutes to 9:25 am.

5. How much time is there from 4:30 pm to 7:40 pm?

6. How much time is there from 7:15 am to 3:35 pm?

7. Pete and Liz drove to Yosemite National Park. Pete drove 3 hours 20 minutes. Liz drove 4 hours 45 minutes. What was the total driving time?

8. Joe went sailing with some friends. They left at 10:30 am and returned 5 hours 45 minutes later. What time did they return?

9. John checks the clock during Math class. It is 1:20 pm. School is out at 3:45 pm. How long will it be until school is out?

10. On Monday, May 5, Pete's teacher assigns a book report which
will be due Thursday, May 14. How many days are there, including weekends, before the book report is due?

11. Marian bought a new car on October 2, 1981, and traded it in on August 2, 1986. How long did she keep the car?

12. Coach Johnson was timing runners in the 880 m run. Patricia started at 3:15:22. Her finishing time was 3:17:06. What was her time to the 880?

Use the following table for problem #13.

<table>
<thead>
<tr>
<th>FLT</th>
<th>DEP</th>
<th>FROM</th>
<th>ARV</th>
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</thead>
<tbody>
<tr>
<td>97</td>
<td>1041a</td>
<td>Atlanta</td>
<td>1123a</td>
</tr>
<tr>
<td>121</td>
<td>1016a</td>
<td>Pittsburg</td>
<td>1205p</td>
</tr>
<tr>
<td>125</td>
<td>943a</td>
<td>Los Angeles</td>
<td>117p</td>
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<tr>
<td>211</td>
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</tr>
<tr>
<td>1066</td>
<td>745a</td>
<td>London</td>
<td>321p</td>
</tr>
</tbody>
</table>

13. The flight information console above shows flight number, departure time, point of origin, and arrival time. How long does flight 211 from Dallas take for the flight?

14. Tim took off from Craig Airport at 10:42 am to fly to Tampa. If he landed at 12:33 pm, how much time did he fly?

15. Jana left her boat at the marina in the morning on February 5, 1987, and left in her boat in the evening on February 19, 1987. How many days should she be charged for using the marina?

16. John's bus schedule shows that his bus will pick him up at 4:47 and leave him at his car at 5:12. How long is his bus ride?

17. Glenda is making a lunch schedule. If students are to have 25 minutes for lunch, and lunch starts at 11:37 am, when should lunch be over?

18. Jerry started work on his senior term paper on September 19, 1986. He completed his final draft on March 2, 1987. How long did it take Jerry to complete his term paper (in months and days)?

19. Kim was born May 28, 1981. How old is she in years, months, and days on December 12, 1990?

20. Bob and Jane left for a 28 day vacation on June 2. When will they return home?
1. 4 hours 25 minutes + 3 hours 55 minutes
2. 5 hours 45 minutes + 5 hours 15 minutes
3. Add 8 hours 15 minutes to 10:10 pm
4. Add 12 hours 35 minutes to 12:05 pm
5. How much time is there from 11:45 am to 6:20 pm?
6. How much time is there from 1:30 am to 12:45 pm?
7. A car was parked in a parking lot from 8:50 am until 9:20 pm the same day. How long was the car parked?
8. Patti bought her car on February 17, 1983, and sold it on May 17, 1985. How many months did she own the car?
9. Dana went shopping with some friends. They left at 8:30 am and returned 8 hours 20 minutes later. What time did they return?
10. Leesa started working on her master's degree on May 5, 1984. She finished her degree on February 16, 1991. How long did it take Leesa to complete her degree? (years, months, and days).
11. Ted bought a new car on May 24, 1982, and traded it in on November 13, 1990. How long did he keep the car?
12. Coach Patterson was timing swimmers in the 440 m relay. Sean started at 4:13:20. His finishing time was 4:14:05. What was his time for the 440?

Use the following table for Problem #13.

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<td>Dallas</td>
<td>210p</td>
</tr>
<tr>
<td>1066</td>
<td>745a</td>
<td>London</td>
<td>321p</td>
</tr>
</tbody>
</table>
13. The flight information console on the front shows flight number, departure time, point of origin, and arrival time. How long does flight 125 from Los Angeles take for the flight?

14. Dave's flight left JIA at 9:33 am and arrived in Philadelphia at 11:50 am. How long was Dave's flight to Philadelphia?

15. Lin left home at 10:20 am and told his mom he would be back in about 4 1/2 hours. What time should Lin return home?

16. Jenni can pick the bus up at 11:33 am and be at the downtown library at 12:08 pm. How long is Jenni's bus ride?

17. Jennifer was born on June 9, 1983. How old will she be on December 25, 1990?

18. Ms. Bean's class goes to lunch at 11:57 am. They are to return in 30 minutes. What time should they return from lunch?

19. June left for a 21 day vacation on July 17. When will she return home?

20. Brad started typing on his paper at 9:47 am. He finished typing at 1:00 pm. How long did Brad type?
1. Glen left home at 7:15 am and did not arrive at work until 8:47 am because of a car wreck. How long did it take Glen to get to work?

2. Add 4 hours 35 minutes to 10:15 am.

3. How much time is there between 4:10 pm and 11:05 pm?

4. Lindsay was born September 12, 1985. How old was she on December 1, 1990 (years, months, and days)?

5. John's dad left for overseas duty on August 7, 1990, and came home on February 23, 1991. How long was John's dad gone (months and days)?
General Math II
Quiz #2

Name ________________________

Date ________________________

Elasped Time
MLS: 12.1

1. Joe left Jacksonville at 6:30 am and arrived in Atlanta at 2:10 pm. How long did it take him to make the drive?

2. Add 6 hours 45 minutes to 9:35 am.

3. How much time is there between 8:05 am and 6:50 pm?

4. Leslie bought a new car on November 20, 1987, and traded it in on September 13, 1990. How long did she keep the car?

5. Elementary school begins at 8:55 am and lets out at 3:25 pm. How long is an elementary school day?
General Math II
Elasped Time Test A

MLS: 12.1

Complete the following:

1. 5 hrs. 25 min. + 4 hrs. 40 min. 

2. 3 hrs. 10 min. + 8 hrs. 45 min. 

3. Add 4 hrs. 20 min. to 9:20 am. 

4. Add 7 hrs. 35 min. to 1:40 pm. 

5. How much time is there from 10:10 am to 2:25 pm? 

6. How much time is there from 4:35 pm to 11:15 pm? 

7. Dennis and Robin drove to Catskill, NY. Dennis drove 2 hrs. 15 min. and Robin drove 4 hrs. 25 min. What was the total driving time? 

8. Leesa and her children left for the beach at 9:30 am and returned at 2:55 pm. How long were they gone? 

9. Jennifer went horseback riding at 11:30 am and returned home 3 hours later. What time did she return? 

10. On Wednesday, January 2, David's teacher assigns a science paper which will be due Friday, January 11. How many days are there, including weekends, before the paper is due? 

11. John bought a new car on August 25, 1984, and traded it in on May 28, 1990. How long in years, months, and days, did John keep the car? 

12. Angela was born July 17, 1974. How old is she on January 1, 1991, in years, months, and days? 

13. Kim left for a 15 day vacation on March 28. When will she return from her vacation? 

OVER
Do the indicated operation.

14. \(14.7 + 0.19 + 25\)
15. \(43 - 17.07\)
16. \(4.5 \times 0.32\)
17. \(1.33 \div 0.07\)
18. \(9 \frac{2}{7} + 11 \frac{3}{4}\)
19. \(5 - 3 \frac{2}{5}\)
20. \(10 \frac{1}{3} - 5 \frac{2}{5}\)
21. \(4 \frac{2}{3} \times 9\frac{1}{35}\)
22. \(9 \frac{1}{5} \div 23\frac{1}{25}\)

Express the following as indicated.

23. \(0.79\) as a percent
24. \(33\%\) as a decimal
25. \(2/5\) as a decimal
26. \(2/5\) as a percent
27. \(45\%\) as a fraction
28. \(.7\) as a fraction
29. \(.39\) as a fraction
30. Find 30\% of 86
31. Lin worked 39 hours last week and earned $5.10 an hour. What was Lin's gross pay?
32. Susan worked 45 hours last week and earned $4.50 an hour. What was Susan's gross pay?
33. Joe bought a fishing rod for $75.47. There was a 6\% sales tax. What was the total price for the fishing rod?
General Math II
Elasped Time Test B

Name ____________________

Date ____________________

MLS: 12.1

Complete the following:

1. 3 hrs. 35 min. + 7 hrs. 40 min. ___________________________

2. 6 hrs. 15 min. + 4 hrs. 20 min. ___________________________

3. Add 5 hrs. 30 min. to 7:45 am. ____________________________

4. Add 8 hrs. 15 min. to 6:30 pm. ___________________________

5. How much time is there from 9:15 am to 3:25 pm? __________

6. How much time is there from 4:45 pm to 10 pm? ____________

7. Chuck and Lynn flew from Jacksonville to Cleaveland, OH. The flight from Jacksonville to Raleigh, NC was 1 hour 50 minutes. The flight from Raleigh to Cleaveland was 2 hours 15 minutes. What was the total flight time for Chuck and Lynn? ____________

8. Ashley went shopping at 8:30 am and returned home 6 hours later. What time did she return home? ________________

9. Dean left for Orlando on July 3 and returned home on July 29. How many days was Dean in Orlando? ________________


11. Pam and her children left for Summer Waves at 9:15 am and returned home at 8 pm. How long were they gone? ___________

12. Alicia was born November 22, 1973. How old is she in years, months, and days on January 1, 1991? __________

13. Jacqui left for an 8 day vacation on December 26. When will she return home? __________

OVER
Do the indicated operation.

14. 23.9 + 4.87 + 17
15. 25 - .238
16. .28 × 4.82
17. 2.16 ÷ .08
18. 13 3/5 + 9 1/4
19. 9 - 6 4/7
20. 12 1/5 - 6 2/3
21. 6 2/3 × 18/45
22. 7 3/7 ÷ 2/21

Express the following as indicated.

23. 8.5 as a percent
24. 4% as a decimal
25. 3/8 as a decimal
26. 3/8 as a percent
27. 66% as a fraction
28. .3 as a fraction
29. .23 as a fraction
30. Find 25% of 95
31. Jeff worked 31 hours last week and earned $4.75 an hour. What was Jeff's gross pay?
32. Edie worked 46 hours last week and earned $3.50 an hour. What was Edie's gross pay?
33. Leslie bought a dress for $69.97. There was a 7% sales tax. What was the total price for the dress?
Chapter 11
Bar Graphs

The length of the bars on the bar graph clearly shows that (1) the greatest heating expense (about $250) results when no insulation is present, and (2) the least heating expense results when complete insulation is present. What is the average heating expense when partial insulation is present? __________

Use the bar graphs to help you complete the following.

1. Who has the greatest number of points? The least number? __________

2. How many contest points has Alan earned? Has Don earned? __________

3. Who has one half as many points as Carol? One third as many? __________

4. How many points have been earned by all four persons? __________

5. On which test did Tom receive the highest score? The lowest score? __________

6. What were Tom's test scores on these tests: Test 1? Test 3? Test 5? __________

7. On which three tests did Tom improve his score over the preceding test? __________

8. On which two tests did Tom not improve his score over the preceding test? __________

9. On which test did Tom receive twice the score he received on test 1? __________
Bar Graphs

Keno County

<table>
<thead>
<tr>
<th>Town</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ada</td>
<td>3,000</td>
</tr>
<tr>
<td>Bay</td>
<td>6,500</td>
</tr>
<tr>
<td>Cass</td>
<td>5,000</td>
</tr>
<tr>
<td>Dale</td>
<td>2,500</td>
</tr>
</tbody>
</table>

The bar for Ada is drawn to show a population of __________.

The bar for Bay is drawn to show a population of __________.

Complete the graph by drawing bars of proper length after Cass and Dale.

Use the information in each table to help you complete each bar graph.

1. Membership Record

<table>
<thead>
<tr>
<th>Member</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ansley</td>
<td>2</td>
</tr>
<tr>
<td>Morris</td>
<td>3</td>
</tr>
<tr>
<td>Richard</td>
<td>2½</td>
</tr>
<tr>
<td>Roberta</td>
<td>1½</td>
</tr>
<tr>
<td>Sandra</td>
<td>1</td>
</tr>
</tbody>
</table>

2. Record of Words Spelled Correctly

<table>
<thead>
<tr>
<th>Test</th>
<th>Number of Words Spelled Correctly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>
Line Graphs

Study how a line graph is used to show hourly changes in temperature. The temperature at 6 a.m. was 40° and the temperature at 7 a.m. was 45°. What was the temperature at 8 a.m.? At 11 a.m.? Did the temperature increase or decrease from 8 to 9? At what time was the lowest temperature recorded?

Use the line graphs to help you answer each question.

1. What was the temperature at 11 a.m.? At noon? At 1 p.m.?
2. What was the lowest temperature recorded? At what time was this?
3. What was the highest temperature recorded? At what time was this?
4. Did the temperature increase or decrease between 10 and 11? Between 11 and noon? Between 1 and 2?
5. In which month was the greatest number of homes sold? The least number?
6. In which months was the number of sales the same?
7. Did the number of sales increase or decrease during the last 3 months of the year?
Line Graphs

<table>
<thead>
<tr>
<th>Month</th>
<th>Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan.</td>
<td>3⅓</td>
</tr>
<tr>
<td>Feb.</td>
<td>3</td>
</tr>
<tr>
<td>Mar.</td>
<td>3</td>
</tr>
<tr>
<td>Apr.</td>
<td>2⅓</td>
</tr>
<tr>
<td>May</td>
<td>3</td>
</tr>
<tr>
<td>June</td>
<td>2⅓</td>
</tr>
</tbody>
</table>

The • for Jan. is drawn to show the average rainfall to be ___ inches.

The • for Feb. represents ___ inches. The • for Mar. represents ___ inches.

Complete the line graph for April, May, and June.

Use the information in each table to help you complete each line graph.

1. Average Monthly Rainfall (Galveston, Texas)

<table>
<thead>
<tr>
<th>Month</th>
<th>Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>5</td>
</tr>
<tr>
<td>Aug.</td>
<td>4⅓</td>
</tr>
<tr>
<td>Sept.</td>
<td>5</td>
</tr>
<tr>
<td>Oct.</td>
<td>3</td>
</tr>
<tr>
<td>Nov.</td>
<td>3⅓</td>
</tr>
<tr>
<td>Dec.</td>
<td>4</td>
</tr>
</tbody>
</table>

2. Bev's Scores on Five Math Tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>40%</td>
</tr>
<tr>
<td>2</td>
<td>75%</td>
</tr>
<tr>
<td>3</td>
<td>70%</td>
</tr>
<tr>
<td>4</td>
<td>80%</td>
</tr>
<tr>
<td>5</td>
<td>95%</td>
</tr>
</tbody>
</table>
Circle Graphs

Study how a circle graph is used to present the following information in a clear and interesting way.

_Arlene spends her allowance as follows: 25% for food, 50% for clothing, 15% for entertainment, and 10% for miscellaneous expenses._

Assume Arlene's allowance is $20.

On clothing she would spend 50% of $20 or $10.
On food she would spend 25% of $20 or $5.
On entertainment she would spend 15% of $20 or $3.
On miscellaneous expenses she would spend 10% of $20 or $2.

Complete each sentence.

1. Assume Lewis' allowance is $25.
   He would spend $10 for clothing.
   He would spend $6.25 for food.
   He would spend $3.75 for entertainment.
   He would spend $2.50 for miscellaneous expenses.

2. Assume Mr. Adams' net income is $9000.
   He would spend $1800 for rent.
   He would spend $1800 for household expenses.
   He would spend $1440 for personal expenses.
   He would save $1000.
   He would spend $100 for miscellaneous expenses.
Bar Graphs

Example: Use the bar graph to tell in what country the highest dam is located and what its approximate height is.

The highest dam is in the USSR. Its height is about 325 m.

Use the graph to answer the following questions.

1. How many meters does the side of one square represent on the vertical scale?

2. Find the approximate height of the Oroville Dam.

3. Find the approximate height of the Dartmouth Dam.

4. Find the approximate height of the Vaiont Dam.

5. Find the approximate height of the Luzzone Dam.

6. Find the approximate height of the Bennett WAC Dam.
LINE GRAPHS

EXAMPLE: Use the line graph to find which city's mayor earned the least. How much is that salary?

The mayor of Albuquerque earned the least -- about $48,000.

Use the graph to answer the following questions.

7. The mayors of which two cities were paid exactly the same?

8. Which city's mayor was paid the most? How much?

9. How much was the mayor of Washington, D.C., paid?

10. How much was Chicago's mayor paid?

11. How much was the mayor of Los Angeles paid?

12. Which city's mayor earned almost as much as the mayor of Washington, D.C.?
CIRCLE GRAPHS

EXAMPLE: Use the circle graph shown. If 24,110,000 people watched TV during the time period indicated, how many of them were men?

35.5% were men. 24,110,000
x .355
8,559,050 men

Use the graph to answer the following questions.

13. Compare the percent of women to the percent of children in the audience.

14. What percent of the people watching are not teens?

15. If 24,110,000 people were watching TV during the period indicated, how many were teens?

16. About 1/10 of the audience is which age group?

17. What percent more women than men were watching TV?

Audience Composition of All Regular Network Programs, 7-11 P.M.
The horizontal bar graph shows the number of tons of coal exported from the U.S. in August. Use this graph to answer the following questions.

1. To which country did the U.S. export the most coal?

2. Which country received the least?

3. Which country received 1500 tons of coal?

4. Which country received about 2250 tons of coal?

5. Which country received about half as much coal as Canada?

6. Which country received 500 tons more than Holland?
The circle graph shows the percentage of the area of the world's oceans. Use this graph to answer the following questions.

1. What ocean makes up about half of the world's water?

2. The Indian Ocean is 5 times larger than what ocean?

3. Together the Atlantic and Pacific Oceans make up what per cent of the world's oceans?

4. The total area of the world's oceans is 140,000,000 square miles. What is the area of the Pacific Ocean?

5. What is the area of the Atlantic Ocean?

6. The total area of the world is about 200,000,000 square miles. What per cent of the world's surface is covered with water?
If the scale is 1 mm = 15 m, what actual distance is represented by:

1. 6 mm  
2. 5.1 mm  

If the scale is 1 cm = 30 km, what actual distance is represented by:

3. 7 cm  
4. 25 cm  

If the scale is 1 in. = 48 mi., what actual distance is represented by:

5. 7 in.  
6. 5 1/2 in.  

If the scale is 1 in. = 64 mi., how many inches represent:

7. 128 mi.  
8. 320 mi.  

Using the diagram shown, find the dimensions of the:

9. living room  
10. bath  
11. bedroom 1  
12. bedroom 2  
13. kitchen  

scale: 1/4" = 3 ft.
Use a ruler to measure parts of the blueprint for House A below. Complete this table.

<table>
<thead>
<tr>
<th>Room</th>
<th>Length in inches</th>
<th>Width in inches</th>
<th>Actual length in feet</th>
<th>Actual width in feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. living rm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. dining rm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. kitchen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. bath</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. bedroom 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. bedroom 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. hall</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

House A scale: 1/8" = 2 ft.

![Blueprint diagram]
General Math II
Worksheet #2

Scale Drawing
MLS: 15.2

If the scale is 1 mm = 15 m, what actual distance is represented by:

1. 15 mm 2. 50 mm

If the scale is 1 cm = 30 km, what actual distance is represented by:

3. 10 cm 4. 8 1/2 cm

If the scale is 1 in. = 48 mi., what actual distance is represented by:

5. 10 in. 6. 3 3/4 in.

If the scale is 1 in. = 64 mi., how many inches represent:

7. 224 mi. 8. 384 mi.

Using the diagram shown, find the dimensions of the:

9. living room 10. bath
11. bedroom 1 12. bedroom 2
13. kitchen

scale: 1/4" = 4 ft.
Use a ruler to measure parts of the blueprint for House A below. Complete this table.

<table>
<thead>
<tr>
<th>Room</th>
<th>Length in inches</th>
<th>Width in inches</th>
<th>Actual length in feet</th>
<th>Actual width in feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. living rm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. dining rm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. kitchen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. bath</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. bedroom 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. bedroom 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. hall</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

House A scale: 1/8" = 3 ft.
If 1/4" = 10' on the drawing above, what actual distance is represented by:

1. 1/2" ____________ 2. 3/4" ____________
3. 1/8" ____________ 4. 3/8" ____________
5. 1 1/4" ____________

6. Measure the swimming pool. Its actual dimensions are ____________ by ____________.

7. How big is each cabin? Length ____________ Width ____________

8. Measure the Lodge and Dining Area:
   Length ____________ Width ____________

9. How large is the Parking Lot?
   Length ____________ Width ____________

10. What are the dimensions of the entire camp area?
    ____________ x ____________
11. Make a scale drawing of a rectangle 20' x 25' below: (Make up your own scale).

12. Use the scale of 1/8" = 10'. Draw a rectangle 120' x 80'.

13. On a map if .5 of an inch represents a mile, draw a line to represent 10 miles.

14. Make a scale drawing of your school room, using the scale of 1/2" = 20'.
Using the diagram below, find the dimensions of the:

1. bedroom 1
2. kitchen
3. bedroom 2
4. living room

scale: 1/4" = 3 ft.

5. If the scale is 1 in. = 250 mi., how many inches represent 1750 miles?
Using the diagram below, find the dimensions of the:

1. bedroom 1
2. kitchen
3. bedroom 2
4. hall

scale: 1/8" = 4 ft.

5. If the scale is 1 in. = 150 mi., how many inches represent 1800 miles?
A. Measure each line to the nearest millimeter.
B. Measure each line to the nearest inch.

1. ______________________
   A. ______
   B. ______

2. ______
   A. ______
   B. ______

3. ______________________
   A. ______
   B. ______

4. ______________________
   A. ______
   B. ______

5. ______
   A. ______
   B. ______

6. ______________________
   A. ______
   B. ______
Scale: 1 inch = 880 miles
For every inch on the map, there are 880 real miles.

MEASURE: From the Los Angeles dot to the Detroit dot is 2 1/4 inches.

MULTIPLY: $2 \frac{1}{4} \times 880 = \frac{9}{4} \times 880 = \frac{7920}{4} = 1980$.

The distance from Los Angeles to Detroit is 1,980 miles.

A. Determine the distance on the map to the nearest 1/4 inch.
B. Determine the real distance in miles.

7. Los Angeles to Chicago
A. _______  B. _______

8. Houston to Detroit
A. _______  B. _______

9. New York to Miami
A. _______  B. _______

10. Los Angeles to Boston
A. _______  B. _______

11. Seattle to San Francisco
A. _______  B. _______

12. Boston to Chicago
A. _______  B. _______

13. Denver to Houston
A. _______  B. _______

14. Chicago to Seattle
A. _______  B. _______

15. Los Angeles to New York
A. _______  B. _______

16. Denver to Boston
A. _______  B. _______
Distance on a Map
MLS: 15.3

A. Measure each line to the nearest millimeter.
B. Measure each line to the nearest inch.

1. ______________
   A. ____________
   B. ____________

2. ____________________________
   A. ____________
   B. ____________

3. ____________________________
   A. ____________
   B. ____________

4. __________
   A. ____________
   B. ____________

5. ____________________________
   A. ____________
   B. ____________

6. ____________________________
   A. ____________
   B. ____________
Scale: 1 inch = 880 miles

For every inch on the map, there are 880 real miles.

MEASURE: From the Los Angeles dot to the Detroit dot is 2 1/4 inches.

MULTIPLY: \(2 \frac{1}{4} \times 880 = \frac{9}{4} \times 880 = \frac{7920}{4} = 1980.\)

The distance from Los Angeles to Detroit is 1,980 miles.

A. Determine the distance on the map to the nearest 1/4 inch.
B. Determine the real distance in miles.

7. Jacksonville to LA  A. ________  B. ________
8. Houston to Jacksonville  A. ________  B. ________
9. Denver to Jacksonville  A. ________  B. ________
10. New York to Jacksonville  A. ________  B. ________
11. Miami to Houston  A. ________  B. ________
12. Denver to Chicago  A. ________  B. ________
13. Los Angeles to Miami  A. ________  B. ________
14. Seattle to Miami  A. ________  B. ________
15. Boston to New York  A. ________  B. ________
16. Denver to Detroit  A. ________  B. ________
A. Determine the distance on the map to the nearest 1/4 inch.
B. Determine the real distance in miles.

1. Los Angeles to Jacksonville   A. ______  B. ______
2. San Francisco to Seattle      A. ______  B. ______
3. Denver to Detroit            A. ______  B. ______
4. Boston to Miami               A. ______  B. ______
5. Houston to Chicago            A. ______  B. ______

Scale: 1 inch = 880 miles
General Math II
Quiz #2

Distance on a Map
MLS: 15.3

A. Determine the distance on the map to the nearest 1/4 inch.
B. Determine the real distance in miles.

1. Los Angeles to Chicago   A.  _____   B.  _____
2. Houston to Jacksonville  A.  _____   B.  _____
3. Detroit to New York      A.  _____   B.  _____
4. Seattle to Boston        A.  _____   B.  _____
5. Denver to San Francisco  A.  _____   B.  _____

Scale: 1 inch = 880 miles
**General Math II**  
Review Worksheet

**Scale Drawing and Distance on a Map**  
MLS: 15.2 & 15.3

A. Measure each line to the nearest millimeter.  
B. Measure each line to the nearest 1/8 inch.

1.  
   A.  
   B.  

2.  

3.  

4.  

5.  

Complete the table.

<table>
<thead>
<tr>
<th>Room</th>
<th>Length in inches</th>
<th>Width in inches</th>
<th>Actual length in feet</th>
<th>Actual width in feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. living rm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. kitchen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. hall</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Scale: 1/8" = 2 ft.
A. Determine the distance on the map to the nearest 1/4 inch.
B. Determine the real distance in miles.

9. Los Angeles to Chicago
   A. ________  B. ________

10. Seattle to Denver
    A. ________  B. ________

11. New York to Houston
    A. ________  B. ________

12. Detroit to San Francisco
    A. ________  B. ________

Scale: 1 inch = 880 miles

If the scale is 1 mm = 25 m, what actual distance is represented by:

13. 8 mm ________

14. 2.9 mm ________

If the scale is 1 inch = 64 miles, what actual distance is represented by:

15. 4 in. ________

16. 6 3/8 in. ________

17. If the scale is 1 cm = 40 km, how many centimeters represent 280 km? ________

18. If the scale is 1 in. = 32 mi., how many inches represent 144 mi.? ________
Graphs, Scale Drawing, & Distance on a Map
MLS: 15.1, 15.2, & 15.3

Number of Cars Sold per Month

1. Which month had the least sales?

2. Which month had the most sales?

3. In which month were 17 cars sold?

4. Between March and April the number of cars sold increased by how much?

5. Between what 2 months was there the greatest increase in car sales?

How an Average Teenager Spends a 24 hour day

6. sleeping?

7. in school?

8. eating?

A. Measure each line to the nearest centimeter.
B. Measure each line to the nearest 1/4 inch.

9. _________________________________  A. __________

OVER  B. __________
10. 

A. Determine the distance on the map to the nearest 1/4 inch.  
B. Determine the real distance in miles.

11. Seattle to Jacksonville  
A. _____  B. _____

12. Denver to Detroit  
A. _____  B. _____

Scale: 1 inch = 880 miles

If the scale is 1 mm = 25 m, what actual distance is represented by:

13. 7 mm  
14. 20 mm

Using the diagram below, find the dimensions of the following:

15. living room  
16. bedroom

Scale: 1/4" = 5 ft.
Complete.

17. 6 ft. = ____ in.  

18. 96 in. = ____ ft.  

19. 15 ft. = ____ yd.  

20. 40 lbs. = ____ oz.  

21. 3 cups = ____ oz.  

22. 43 m = ____ cm  

23. 179 ml = ____ L  

24. 7 kg = ____ g  

25. The metric unit for length is the  

26. Mary left for work at 7:45 am and returned home at 6:15 pm. How long was she gone from home?  

27. Arnie worked 37 hours last week and earned $4.95 an hour. What was Arnie's total pay?  

28. Anne worked 44 hours last week and earned $5.20 an hour. She receives time and a half for all hours over 40. What was Anne's total pay?  

Do the indicated operation.

29. 17 1/2 + 13 5/8  

30. 15 1/3 - 9 3/4  

31. 3 3/8 x 32/45  

32. 18 ÷ 4 1/2  

33. 4.8 + 13.09 + 21
Graphs, Scale Drawing, & Distance on a Map
MLS: 15.1, 15.2, & 15.3

Number of Cars Sold per Month

1. Which month had the least sales?

2. Which month had the most sales?

3. In which month were 17 cars sold?

4. Between March and April the number of cars sold increased by how much?

5. Between what 2 months was there the greatest increase in car sales?

6. How many hours does a teenager spend: in recreation?

7. How many hours does a teenager spend: in school?

8. How many hours does a teenager spend: doing misc. activities?

A. Measure each line to the nearest centimeter.
B. Measure each line to the nearest 1/4 inch.

9. ____________________________

OVER

A. ____________

B. ____________
10. A. __________  B. __________

A. Determine the distance on the map to the nearest 1/4 inch.
B. Determine the real distance in miles.

11. Chicago to Jacksonville  A. _______  B. _______
12. Miami to New York    A. _______  B. _______

Scale: 1 inch = 880 miles

If the scale is 1 mm = 25 m, what actual distance is represented by:

13. 5 mm  _________
14. 15 mm  _________

Using the diagram below, find the dimensions of the following:

15. Dining Area  _________
16. bedroom 2  _________

Scale: 1/4" = 5 ft.
Complete.

17. 4 ft. = ____ in. 

18. 84 in. = ____ ft. 

19. 27 ft. = ____ yd. 

20. 24 lbs. = ____ oz. 

21. 5 cups = ____ oz. 

22. 57 m = ____ cm 

23. 213 ml = ____ L 

24. 9 kg = ____ g 

25. The metric unit for volume is the 

26. Mary left for work at 6:55 am and returned home at 4:45 pm. How long was she gone from home? 

27. Arnie worked 33 hours last week and earned $3.75 an hour. What was Arnie's total pay? 

28. Anne worked 46 hours last week and earned $4.80 an hour. She receives time and a half for all hours over 40. What was Anne's total pay? 

Do the indicated operation.

29. $13 \frac{1}{2} + 45 \frac{5}{6} 

30. $17 \frac{2}{3} - 7 \frac{3}{4} 

31. $4 \frac{1}{8} \times 32/45$ 

32. $22 \div 4 \frac{1}{2}$ 

33. $5.7 + 16.17 + 34$
Pamela W. Bean

Home -
Work -

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