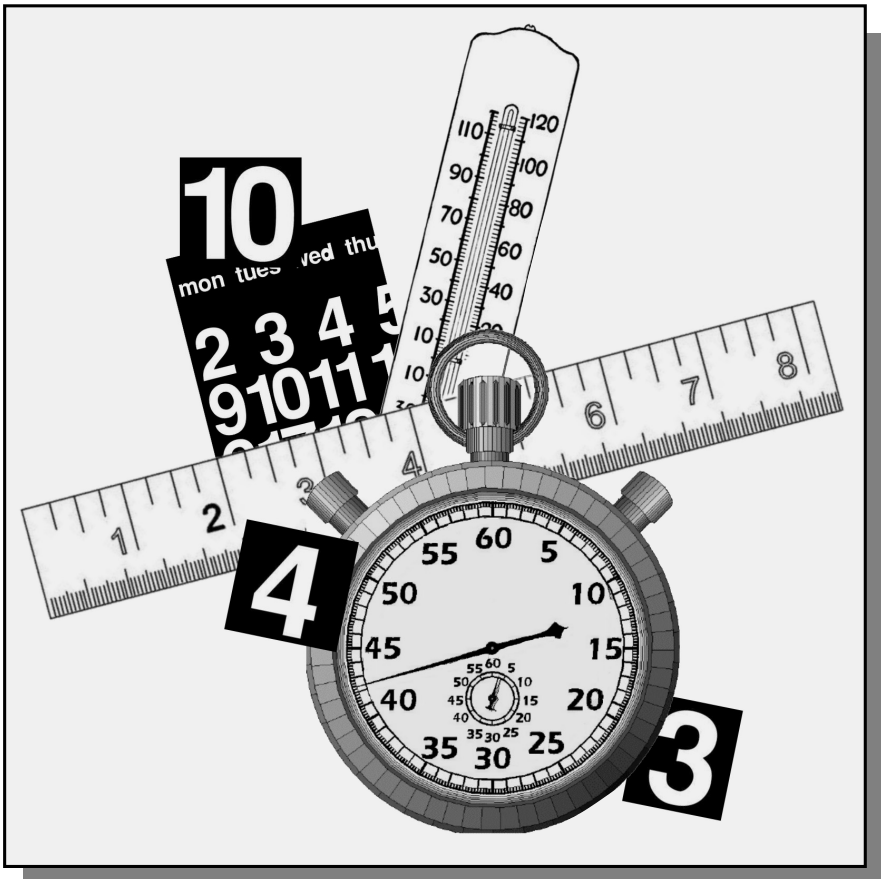
Basic Math Skills

Activities



Chapter 2

BMS: 76036 Revision: 10-15-2007

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Chapter 2

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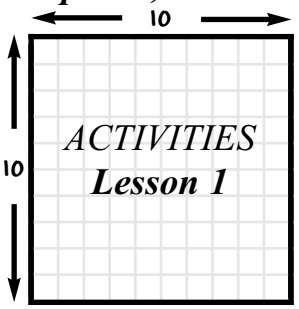
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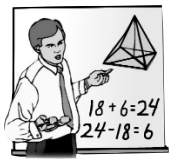
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Fundamentals

Number Systems

You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. A person who studies the past by digging up bones and old pots is an_____.

2. The earliest form of mathematics was _____.

3. The Egyptians used a symbol named after the _____ of the foot to represent the number 10.

4. An archaeologist has to _____ ancient writings.

5. The symbols used today to represent numbers are called _____ symbols

6. The Chinese know how to count very well on their _____.

7. The _____ used a sideways "v" to represent the number 10.

8. The upside down "U" of Egyptian mathematics is called a _____.

9. The Mayan civilization used _____ and a _____ line to represent numbers.

10. The Hebrews and Greeks used _____ for numbers.

11. Not all cultures had a symbol for _____.

12. A _____ is a collection of objects.

13. The numbers 1, 2, 3, 4, 5, 6, 7, 8, 9 are known as _____ numbers.

14. Whole numbers include the _____ numbers and _____.

15. In a list of numbers (set) the three _____ mean the pattern continues indefinitely.

16. In Example Set 1, what would the ninth number be in the first set? _____

17. In Example Set 1, what would the seventh number be in the second set? _____

18. In a tally system of counting, the _____ sticks, dots, triangles or marks you see means you have a _____ number.

19. How many camels did Rauel and Ahab have altogether? _____

20. The best method for visualizing whether one number is greater than or less than another number is by using a _____.

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21. On a number line, the arrow on the right end of the number line means that the numbers can _____ on as far as you want or need them to.

22. If nine is greater than another number, then nine must be located to the _____ of the other number on a number line.

23. If four is less than another number, then four must be located to the _____ of the other number on a number line.

24. The mathematical symbol for *greater than* is _____; *for less than* is _____.

Find the next number in the set given and write it in the blank provided.

25. {1, 2, 3, 4, 5…} _____ **26.** {3, 6, 9, 12, 15, 18…} _____

27. {5, 10, 15, 20, 25, 30…} _____ **28.** {1, 4, 7, 10…} _____

29. {4, 8, 12, 16, 20…} _____ **30.** {11, 22, 33, 44, 55…} _____

Determine if the number to the left is greater than or less than the number on the right. Write the correct symbol in the blank. Use the number line in Table 2 or draw your own in the margin of this activity.

31. 2 ____ 9 **32.** 7 ____ 3 **33.** 10 ___ 5 **34.** 8 ____ 9

35. 12 ____ 10 **36.** 14 ___ 20 **37.** 32 ____ 31 **38.** 1 ____ 0

39. 123 ____ 23 **40.** 54 ____ 45 **41.** 22 ____ 44 **42.** 66 ____ 33

Fill in the blanks with the Roman Numeral for each number.

43. 1 _____ **44.** 2 _____ **45.** 3 _____ **46.** 4 _____

47. 5 _____ **48.** 6 _____ **49.** 7 _____ **50.** 8 _____

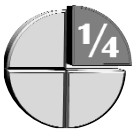
51. 9 _____ **52.** 10 ____

53. Write the **Life Principle**. "_____
_____."

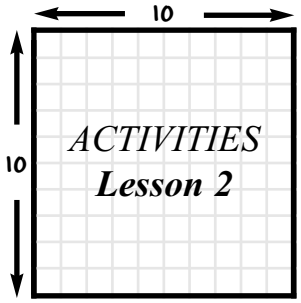
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Fractions



Fractions

You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. A pizza is usually cut into _____ or _____ slices.

2. Milk is sold in _____ or _____ gallons.

3. The _____ on a car divides miles into parts using _____ to represent fractions.

4. A numerical representation of a part of a whole is called a _____.

5. In the story of Cabeza de Vaca, the group of 600 men was divided into _____ groups.

6. What fractional part of the invasion forces at Normandy became casualties. _____

7. You can do math if you take it one _____ step at a time.

8. The first civilizations to use fractions were the _____ and the _____.

9. A _____ fraction has only a one in the numerator.

Label the following parts of a fraction:

10. _____

11. _____ $\frac{3}{5}$

12. _____

13. The _____ is the number that is above the ***fraction bar***.

14. The _____ is the number that is below the fraction bar.

15. A fraction in which the numerator is smaller than the denominator is called a _____ fraction.

16. A fraction in which the numerator is larger than the denominator is called a/an _____ fraction.

17. Into how many pieces is the pie in Example Set 2 cut? _____

18. In Example Set 3, how many slices of pizza have been eaten? _____

19. What fraction would represent a pizza cut into eight slices with none having been eaten? _____

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20. If the numerator and the denominator of a fraction are the same number the fraction has a value of _____.

21. Fractions are another method to signify _____ of two numbers.

22. If a fraction has a zero (0) in the numerator, the value of the fraction is _____.

23. Division by zero is _____.

24. A fraction can have a zero in the denominator? _____ (a) True or (b) False

25. Any number can be written as a _____ with a _____ in the denominator.

26. In Example Set 4, $\frac{3}{4}$ is a/an _____ fraction.

27. In Example Set 4, $\frac{8}{5}$ is a/an _____ fraction.

28. A fraction that is not a proper fraction is an _____ fraction.

29. $\frac{7}{2}$ is considered a/an _____ fraction because the numerator is larger than the denominator

Write IP (improper fraction) or P (proper fraction) beside each fraction to designate if the fraction is improper or proper.

30. $\frac{1}{2}$ _____ **31.** $\frac{5}{6}$ _____ **32.** $\frac{9}{4}$ _____ **33.** $\frac{10}{7}$ _____

34. $\frac{3}{4}$ _____ **35.** $\frac{4}{3}$ _____ **36.** $\frac{2}{3}$ _____ **37.** $\frac{1}{9}$ _____

Write the following as a fraction. (See Rule 4.)

38. 43 _____ **39.** 3 _____ **40.** 63 _____ **41.** 752 _____

Refer to Rules 2, 3 and 4, then write the value of each fraction on the blank provided.

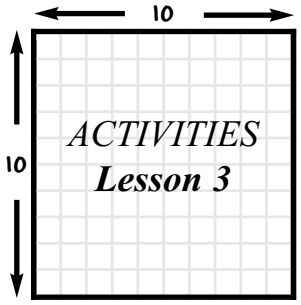
42. $\frac{0}{5}$ _____ **43.** $\frac{8}{1}$ _____ **44.** $\frac{0}{123}$ _____ **45.** $\frac{75}{0}$ _____

46. Write the **Life Principle**. "_____
_____."

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Date: _____ Grade: _____





Decimals

Decimal Conversions

You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Two baseball legends from the 1900s were _____ and _____.

2. All baseball players who bat have a _____.

3. ***Batting averages*** are given in _____ form.

4. How many times did "Babe" Ruth bat in the 1928 World Series? _____

5. "Babe" Ruth is _____ on the list of hitters with 10 or more at-bats in a World Series.

6. A _____ is an average used to determine how well a batter is batting.

7. A number with a decimal point is said to be written in _____.

8. In Example Set 1, Ruth's batting average is figured by dividing the number of _____ by the number of _____.

9. In Example Set 1, since sixteen cannot divide ten, a _____ is added to the right of the last digit of the ten.

10. $\overline{)\ \ }$ is a symbol in division called a _____ and separates the divisor, dividend and quotient.

11. What was "Babe" Ruth's batting average in this example? _____

12. Write the words to show how a sports announcer would say Ruth's batting average:

_____

13. Digits to the right of a decimal point have _____ value.

14. A digit in the third place to the right of a decimal has a value of _____.

15. A digit in the fourth place to the left of a decimal has a value of _____.

16. When reading a decimal, the _____value of the last digit to the right determines the wording.

17. When writing in words a number containing a decimal, the word "_____ " is used to show the location of the decimal.

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18. To change a fraction into a decimal, _____ the numerator by the denominator.

19. In Example Set 2, the decimal .763, became the fraction _____.

20. In Example Set 2, the decimal 5.9, became _____.

Fill in the blanks with the correct decimal or fraction. Refer to Table 2.

	Fraction	Decimal equivalent		Fraction	Decimal equivalent
21.	$^1/_2$	_____	**22.**	$^1/_3$	_____
23.	_____	.125	**24.**	_____	.25
25.	$^2/_3$	_____	**26.**	_____	.2

Change the following fractions into decimals. Use the space provided to show your work. Place your final answer on the blank.

27. $\frac{5}{10} =$ _____

28. $\frac{2}{5} =$ _____

29. $\frac{3}{9} =$ _____

30. $\frac{4}{8} =$ _____

Change these decimals into fraction. Write the answer on the blank.
Refer to Example Set 2 for #31-34.

31. .8 _____ **32.** .37 _____ **33.** .279 _____ **34.** .3 _____

35. Kevin and Matthew play on a Little League baseball team. In the last game of the season, Kevin batted six times and had two hits. In the same game Matthew batted four times and was given credit for only one hit. Compute each boy's batting average and write the answer on the blank beside his name.

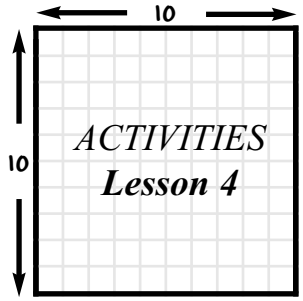
Kevin _____ Matthew _____

36. Write the **Life Principle**. "_____
_____."

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Name: _____

Date: _____ Grade: _____





Percent

Decimals; Money

You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. In the song, "Take Me Out to the Ballgame," we are rooting for the _____ team.

2. ***Money*** is written in _____ form.

3. _____ is a standard used to measure something's value.

4. Five ***cents*** is called a _____.

5. Using what you know from experience, fifty _____ could be traded for 10 ***nickels*** or 5 ***dimes*** or 2 ***quarters***.

6. A ***dollar*** is the same as _____ cents.

7. A dollar can be a _____, but is usually _____ money.

8. Fill in the table with the missing values or words.

Dollar Sign		Thousands		Tens	Ones		Tens of cents	Cents
	10,000		100	10	1	•		

Refer to Example Set 1 to answer questions 9-15.

9. The cost of admission given for the 1928 World Series was _____ dollar.

10. The cost of a coke was _____ dime.

11. The cost of a one bag of peanuts was a _____.

12. Cracker Jacks™ would have cost a _____.

13. The words, "total cost," imply an _____ problem.

14. How many times is the cost of the peanuts added in the problem? _____

15. The _____ are aligned to keep the place values of the various denominations of money in their correct position.

16. If a dollar is divided into one hundred parts, you then have _____ or _____.

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Refer to Example Set 2 a) to answer questions 17-20.

17. The *hundredths place* in Step 1 is marked off with a _____.

18. The decimal point in the _____ is aligned with the decimal points in the other numbers.

19. How many groups of ten tenths are carried into the *ones* column in Step 2? _____

20. 4.5 + 2.76 = _____.

Refer to Example Set 2 b) to answer questions 21-25.

21. The procedure for adding more than two numbers that contain decimal points together is the _____ as when adding two numbers not containing decimal points.

22. The nine in the sum of 6 + 7 + 6 is placed in the _____ place of the answer.

23. In the sum of 1 + 5 + 6 + 5, the seven is placed in the _____ place of the answer and the one is carried to the _____ column.

24. The sum of 15.456 + 3.567 + .056 is _____.

Refer to Example Set 3 to answer questions 26-32.

25. Subtraction of numbers containing decimal points follow the _____ rules as subtraction of numbers not containing decimals.

26. In Step 1, the first difference is found using the numbers in the _____ column.

27. In Step 2, one group of ten tenths must be borrowed from across the _____.

28. The decimal point in the difference is _____ with the decimal points above it.

29. In Step 3, the 2 is placed in the _____ place of the difference.

30. In Step 4 the last difference found is _____.

31. The answer to #30 was placed in the _____ place of the final answer.

Work the following problems. Show your work.

32. Rhonda and Jane went shopping last weekend at the mall. Rhonda took $300.00 with her to purchase clothes. Jane took $200.00. Rhonda purchased a dress for $75.00, a pair of shoes for $50.80, and a new handbag for $35.05. Jane purchased a dress, which cost $125.00. Both girls spent $10.25 each for lunch. How much money did each girl have left at the end of the day?

Rhonda _____ Jane _____

What two math operations did you use in each case to find the answer? _____, _____

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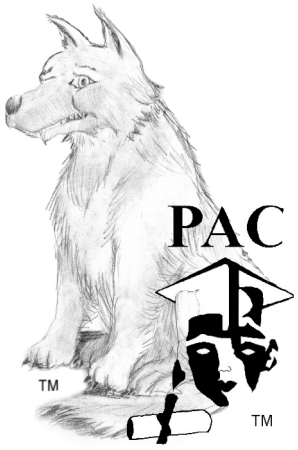
33. When Jane returned home she decided to bake a cake. Jane used a plastic $\frac{1}{2}$ cup to measure the ingredients. Jane read the recipe and concluded she would have to put five of her $\frac{1}{2}$ cups of milk in the bowl. How many cups of milk were required for the recipe? (Hint: change $\frac{1}{2}$ to decimal form; add $\frac{1}{2}$ in decimal form five times; leave the answer in decimal form.)

Add or Subtract.

34.	3.65 + 2.74	**35.**	78.9 + 16.56	**36.**	21.345 + 1.255	**37.**	457.87 21.51 + 9.42
38.	45.75 - 2.46	**39.**	908.342 - 209.233	**40.**	2.68 - .78	**41.**	33.3333 - 32.4004

42. Write the **Life Principle**. "_____
_____."

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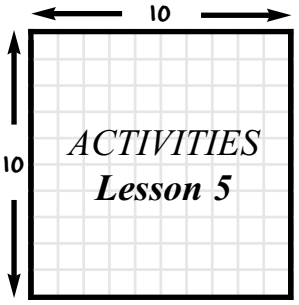


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Decimal

Decimals



You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. As a young boy, George Washington began the habit of telling the _____.

2. Telling the truth became a part of Washington's _____.

3. Multiplication of numbers that include decimal points is carried out in much the _____ way as numbers that do not include decimal points.

4. In multiplication, the decimal is placed in the same manner as in addition, subtraction or division. _____ (a) True or (b) False

5. In multiplying numbers with decimal points you have to count the total number of _____ in the factors, then put the decimal point that many places to the _____ in the final product .

6. A _____ is the number of times something is divided.

7. The _____ is the number being divided.

8. A _____ is the answer to a division problem.

Refer to Example Set 1 to answer questions 9-20.

9. In this example, 2.5 is multiplied by _____.

10. In Step 2, the first product found is _____.

11. In Step 2, the second product found is _____.

12. In Step 3, a _____ marks off the *ones* place.

13. The zero in Step 3 helps keep the place values _____.

14. The product found in Step 3 is _____.

15. The one from the product of #14 is carried to the digit in the _____ place of the first factor.

16. Looking at Step 4, fill in the missing numbers. _____ + 1 = _____

17. In Step 5, the next step is to _____ the two products together.

18. The decimal in the final product, 800, of Step 5 is to the _____ of the last digit.

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19. Step 6 shows that you must move the decimal _____ places to the left to obtain the correct product.

20. 2.5 × 3.2 = _____

Refer to Example Set 2 to tell how many decimal places are in the products of the following questions. Place the answer on the blank provided. Do NOT find the product.

21. 4 × .444 _____ **22.** 2.33 × 5.678 _____ **23.** .1234 × .9876 _____

24. To find the number of decimal places in the final product, _____ the total number of decimal places in all the factors combined.

Refer to Example Set 3 to answer questions 25-29.

25. The decimal point in the quotient is aligned with the decimal point in the _____.

26. In Step 2, the 4 is placed on top of the _____ above the 8.

27. The remainder is _____.

28. The quotient is _____.

29. Write the mathematical principle for moving decimal points in a division problem:

_____

_____

_____

Refer to Example Set 4 to answer questions 30-41.

30. The problem is 2.8782 divided by _____.

31. The divisor cannot have any decimal places to the _____ of the decimal point.

32. In this problem the decimal point must be moved _____ places to the right.

33. The decimal point must be moved in both the _____ and the _____.

34. The division problem now is _____ ÷ _____.

35. In Step 3, the 234 cannot divide into 2 or 28, so a _____ is placed above the 2 and the 8 to mark off those places.

36. In Step 4, 287 contains _____ group(s) of 234.

37. The decimal is placed _____ the decimal in the dividend.

38. In Step 5, the 538 contains _____ groups of 234.

39. 234 × _____ = 468

40. 234 divides into 702 _____ times.

41. The quotient of 2.8782 ÷ 2.34 is _____.

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Refer to the Vocabulary section to answer the following questions.

42. In the problem $^{24}/_{6} = 4$, *24* is called the _____.

43. In the problem $^{44}/_{11} = 4$, *4* is called the _____.

44. In the problem $^{4.2}/_{2.1} = 2$, *2.1* is called the _____.

Work the following problems. Put the answer on the blank provided. Show your work.

45. _____

$$\begin{array}{r} 3.5 \\ \times\ 1.1 \\ \hline \end{array}$$

46. _____

$$\begin{array}{r} 2.33 \\ \times\ .22 \\ \hline \end{array}$$

47. _____

$$\begin{array}{r} 45.1 \\ \times\ 2.4 \\ \hline \end{array}$$

48. _____

$$\begin{array}{r} 7.45 \\ \times\ 1.02 \\ \hline \end{array}$$

49. _____ $2\overline{)2.8}$

50. _____ $3.2\overline{)6.4}$

51. _____ $.125\overline{)1.000}$

52. _____ $.12\overline{)1.44}$

53. Write the **Life Principle.** "_____
_____."

Note: Ask your teacher for the quiz over lessons 1-5 before proceeding to the next section. Reminder: If you score 85% or higher on the three section quizzes, you may be exempt from the chapter test!



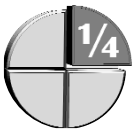
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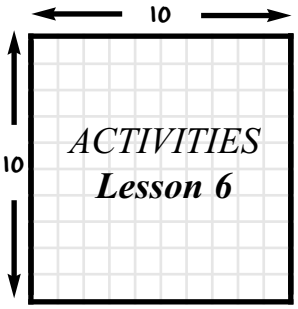
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Name: _____

Date: _____ Grade: _____



Fractions



Mixed Numbers

You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Professor K says it is not possible to mix a good life with bad principles and ideas.
_____ (a) True or (b) False

2. Learning proper procedures is _____ to the outcome of a thing.

3. Mathematics is a _____ science.

4. Practicing proper procedures is very important in the study of _____.

5. A fraction combined with a whole number is called a _____.

Refer to Example Set 1 a) to answer questions 6-11.

6. What was the original number of whole pies? _____

7. The pie was cut into _____ or five equal slices.

8. How many friends came over to eat pie? _____

9. How many whole pies remained after one pie was cut? _____

10. _____ slices of pie were eaten in the example.

Refer to Rules 1-3 to answer questions 11-16.

11. The _____ of two or more fractions must be the same before the operations of addition or subtraction can be performed.

12. Only the numbers in the _____ are subtracted.

13. The _____ of fractions with like denominators is accomplished by subtracting the numerators.

14. $^{9}/_{10} - {}^{6}/_{10} =$ _____

15. The _____ of fractions with like denominators is accomplished by adding the numerators.

16. $^{9}/_{15} + {}^{4}/_{15} =$ _____

17. If two fractions are ***equivalent***, then they have the same _____.

18. In a proper fraction the numerator is _____ than the denominator.

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19. Improper fractions are sometimes changed into a _____ number combined with a _____.

Refer to Example Set 2 to find the answers to questions 20-23.

20. How many pieces of pie are in the second pan? _____

21. The five pieces of pie in the first pan became _____ whole pie.

22. The proper form of $^{8}/_{5}$ is _____.

23. All final answers containing fractions must be written as _____.

Add the following. Show your work. Remember to write answers in the proper form.

24. $^{1}/_{6} + 2^{5}/_{6} + ^{1}/_{6} =$

25. $^{2}/_{9} + ^{3}/_{9} + ^{1}/_{9} =$

26. $^{9}/_{13} + 3^{2}/_{13} + ^{4}/_{13} =$

27. $^{3}/_{4} + 1^{1}/_{4} + 5^{3}/_{4} =$

28. $1^{3}/_{5} + 2^{1}/_{5} + 3^{2}/_{5} =$

Subtract the following. Show your work. Remember to write answers in the proper form.

29. $^{9}/_{15} - ^{2}/_{15} =$

30. $^{7}/_{9} - ^{5}/_{9} =$

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31. $10\frac{9}{11} - 8\frac{7}{11} =$

32. $\frac{46}{47} - \frac{43}{47} =$

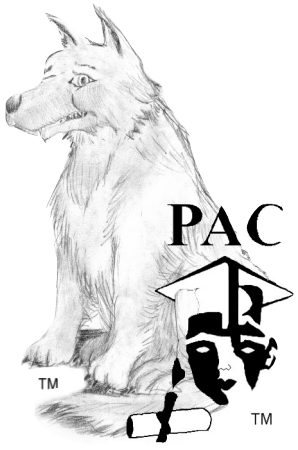
33. $\frac{123}{121} - \frac{122}{121} =$

34. $2\frac{1}{2} - 2\frac{1}{2} =$

35. $\frac{4}{11} - \frac{3}{11} =$

36. Write the **Life Principle**. "_____
_____."

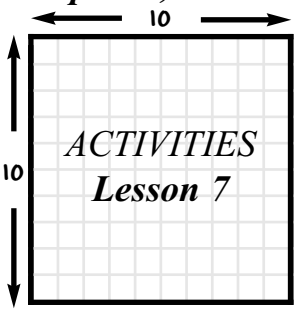
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Decimals



More Decimals

You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Many people believe that _____ repeats itself.

2. By studying history you can see _____ to the events in today's world.

3. Which of the two opposing generals lost the race to control the pass discussed in the story.
_____

4. The pass was on the continent of _____.

5. Mathematical principles and concepts learned previously are often _____ in new levels of mathematics.

6. Decimals can be terminating or _____.

7. In Example Set 1, the fraction $^{1}/_{4}$ represents the ***terminating decimal*** _____.

8. In Example Set 1, the fraction $^{3}/_{8}$ represents the terminating decimal _____.

9. A decimal that represents a fraction in which the denominator divides into the numerator evenly, or the quotient has a remainder of zero, is said to be a _____ decimal.

10. In Example Set 2, the decimals shown are _____ decimals.

11. In Example Set 2, the fraction $^{1}/_{3}$ is represented as the ***repeating decimal*** _____.

12. In Example Set 2, the fraction $^{101}/_{99}$ is represented as the repeating decimal _____.

13. A decimal that represents a fraction in which the denominator divides into the numerator and the quotient does **NOT** have a remainder of zero is said to be a _____ decimal, if one or more of the digits in the decimal portion of the quotient repeats indefinitely.

14. The repeating portion of the decimal is signified by three dots (…) following the repeating digits, or a bar (—) over the top of the repeating _____ or digits.

15. A _____ is the group of digits of a decimal that repeats.

16. The ***repetend*** can be one digit or a _____ of more than one digit.

17. In Example Set 3, the repetend of .777… is _____.

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18. In Example Set 3, the repetend of 1.123123… is _____.

Refer to Example Sets 1-3 to answer questions 19-24. Determine if the following fractions are terminating or repeating. Write T for terminating or R for repeating on the blank provided. Show your work for #22-24.

19. .65 _____

20. $.\overline{4}$ _____

21. $3.45\overline{64}$ _____

22. $^3/_9$ _____

23. $^4/_5$ _____

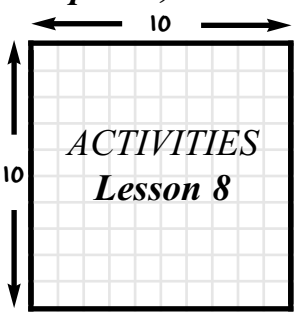
24. $^3/_{12}$ _____

25. Write the **Life Principle**. "_____
_____."

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Fractions



Multiplying Fractions

You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. A dollar contains _____ pennies.

2. Governments collect _____ tax.

3. Governments bring in _____ of dollars from sales taxes.

4. "Government" money used to provide services and programs comes from taxing private _____ and _____

5. Food of low nutritional value is called _____.

6. The process of splitting a number into all its various factors is called _____.

7. To _____ means to "divide out" factors in a fraction.

8. The process of multiplying two or more fractions together is similar to _____ of fractions.

9. When multiplying fractions together the denominators must be equal. _____
(a) True or (b) False

10. When multiplying two or more fractions the denominators do _____ have to be the same number as with addition.

11. $\frac{1}{2} \bullet \frac{1}{3} \bullet \frac{1}{4} =$ _____

12. $25 \times 5 =$ _____

Refer to Example Set 1 to answer questions 13-15.

13. In Example Set 1 (c) the thirty is placed in the _____ of the final product.

14. The procedure for multiplication and addition of fractions is interchangeable. _____
(a) True or (b) False

15. In Example Set 1 (c), $2 \times 15 =$ _____.

Refer to Example Set 2 to answer questions 16-18.

16. The complete ***factorization*** of the numerator is _____.

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17. The complete factorization of the denominator is _____.

18. $\frac{8}{30} =$ _____ (Express in lowest terms)

19. Many times the division of the common factors is referred to as _____.

Multiply the following fractions together. Show your work. Reduce answers to simplest form.

20. $\frac{4}{3} \bullet \frac{2}{3} =$ _____

21. $\frac{1}{2} \bullet \frac{2}{9} =$ _____

22. $\frac{9}{2} \bullet \frac{2}{4} =$ _____

23. $\frac{4}{3} \bullet \frac{2}{1} =$ _____

24. $\frac{2}{5} \bullet \frac{2}{3} \bullet \frac{2}{5} =$ _____

25. $\frac{1}{2} \bullet \frac{2}{7} \bullet \frac{3}{10} =$ _____

26. $\frac{1}{3} \bullet \frac{3}{2} \bullet \frac{3}{5} \bullet \frac{1}{4} =$ _____

27. Write the **Life Principle**: "_____
_____."

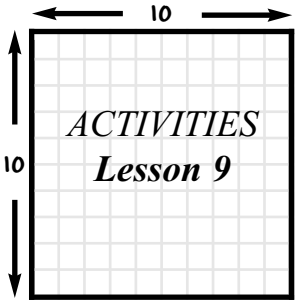
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Name: _____

Date: _____ Grade: _____



Fractions



Fractions–Division

You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. On 9-11-2001 terrorists attacked the _____.

2. The enemies of the U.S. thought that fear and doubt would _____ the people.

3. The attack only proved to unite the citizens of the United States and _____ their resolve.

4. The multiplicative inverse of a number is called the _____ of that number.

5. _____ means to turn over or flip.

6. Any whole number can be written in fraction form with a _____ in the denominator.

Refer to Example Set 1 to answer questions 7-9.

7. The reciprocal of 25 is _____.

8. The reciprocal of 4 is _____.

9. One-fourth is the reciprocal of _____.

Refer to Example Set 2 for questions 10-11.

10. The reciprocal of $^{5}/_{6}$ is _____ .

11. The reciprocal of $^{3}/_{31}$ is _____.

12. To divide fractions you must _____ the divisor (the number to the right of the division symbol) and multiply.

Refer to Example Set 3 to answer questions 13-15.

13. The symbol → means changes to, _____ or implies.

14. The reciprocal of $^{1}/_{8}$ _____

15. $\frac{2}{3} \div \frac{1}{8} =$ _____ = _____

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Refer to Example Set 4 to answer questions 16-18.

16. The numerators and denominators are _____ together after the reciprocal is determined.

17. Step 4 shows the _____ process of the numerator and denominator.

18. Like factors are _____ to produce the final answer.

19. The answer to fractions must always be presented in _____ form and _____ terms.

Divide the following fractions. Show your work. Reduce answers to simplest form.

20. $\frac{4}{3} \div \frac{2}{3} =$ _____

21. $\frac{5}{7} \div \frac{2}{9} =$ _____

22. $\frac{25}{5} \div \frac{5}{6} =$ _____

23. $\frac{1}{3} \div \frac{1}{4} =$ _____

24. $1\frac{1}{3} \div \frac{2}{5} =$ _____

25. $2\frac{2}{3} \div \frac{3}{4} =$ _____

26. $3\frac{4}{5} \div 1\frac{4}{5} =$ _____

27. $\frac{5}{7} \div \frac{5}{7} =$ _____

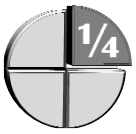
28. $\frac{5}{9} \div \frac{10}{18} =$ _____

29. $\frac{1}{2} \div \frac{2}{3} =$ _____

30. $\frac{3}{4} \div \frac{9}{4} =$ _____

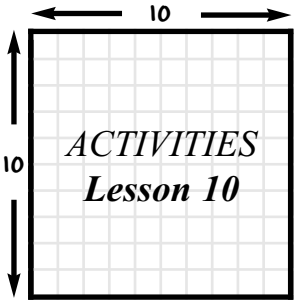
31. Write the **Life Principle:** "_____ _____."

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Fractions

Fractions Again!!



You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. The children in the story thought the father should have given the _____ value of apples to both ***siblings***.

2. Two children of the same family (whether brothers, sisters, or one of each) are called _____.

3. The mathematical principle exemplified in the story is: _____ _____ _____.

4. Before two fractions can be added or subtracted the _____ must be the same.

5. Sometimes, to perform the operations of addition or subtraction on fractions, you must find a _____.

6. You must multiply the numerator and denominator by the _____ number to maintain the value of the original fraction.

7. The mathematical principle in question #6 is the same as multiplying by _____.

8. In Example Set 1, the numerator and denominator are each multiplied by _____.

9. The pie graph in Example Set 1 shows that $\frac{2}{4}$ is _____ to $\frac{1}{2}$.

10. Multiplying a number by a fraction in which the numerator and denominator are _____ is the same as multiplying the number by _____.

11. The _____ number must be used to multiply the numerator and denominator of a fraction to maintain the value of the original fraction.

12. Addition of two fractions requires the _____ to be equal before adding.

13. A number that two or more denominators of separate fractions can be changed to so addition or subtraction can be performed is called a _____ _____.

14. The _____ is the smallest number that contains, as factors, the denominators of two fractions.

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15. In Example Set 2, the ***lowest common denominator*** (LCD) is _____.

16. Only the _____ answer must be presented in reduced form (lowest terms).

Refer to Example Set 3 to answer the following questions.

17. The multiplications in Step 1 were restated from _____.

18. $\frac{7}{6} =$ _____

19. $\frac{1}{6}$ is an improper fraction. _____ (a) True or (b) False

Work the following problems. Show your work.

20. Sally needed $2\frac{1}{3}$ cups of milk to bake a cake. She also needed $1\frac{1}{2}$ cups of milk for the icing. How many total cups of milk does Sally need to complete her cake?

21. Elsa made $10\frac{1}{2}$ quarts of picante sauce for her school's bake sale. Felicia made $5\frac{3}{4}$ quarts of picante sauce. Juanita made $15\frac{1}{3}$ quarts of picante sauce. How many quarts of picante sauce did the three students make for the bake sale?

Work the following problems. Show your work. Reduce answers to lowest terms.

22. $\frac{3}{4} + \frac{2}{3} =$ _____

23. $\frac{2}{7} + 1\frac{1}{3} =$ _____

24. $2\frac{2}{15} + 1\frac{1}{3} =$ _____

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25. $\frac{3}{5} - \frac{1}{2} =$ _____

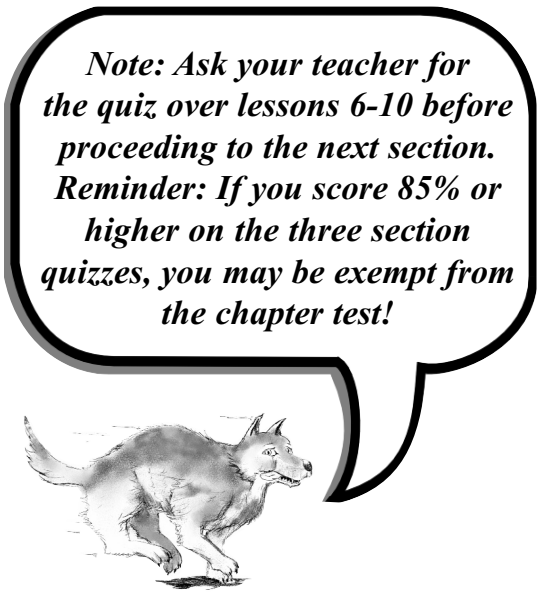
26. $1\frac{1}{2} - \frac{9}{10} =$ _____

27. $2\frac{5}{8} - \frac{15}{16} =$ _____

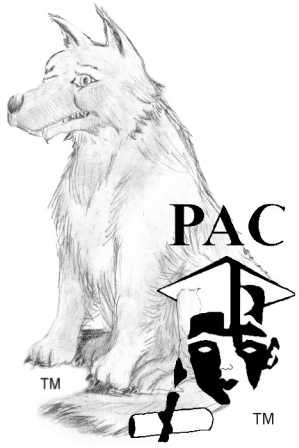
28. $\frac{8}{5} + \frac{3}{10} =$ _____

29. $\frac{1}{2} - \frac{1}{3} =$ _____

30. Write the **Life Principle:** "_____
_____."



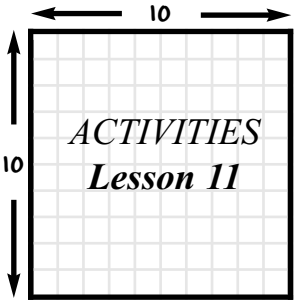
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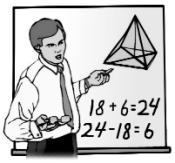


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Fundamentals

Rounding and Estimation

You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. You can **estimate** answers to problems by using a mathematical process called _____.

2. ***Rounding*** allows you to make an _____ of the answer to a problem.

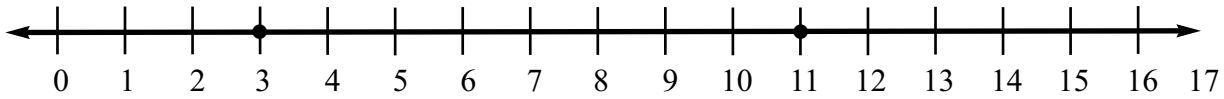
3. Sometimes you do not have to know an _____ answer to a problem.

4. The distance around the earth or the number of people living in the United States are usually only ***approximations*** or _____ of the exact answer.

5. To visualize rounding, it is helpful to look at a _____ line.

6. Look at the number line below and round the numbers shown to the nearest five. _____, _____

Answer #7-8 using the number line below.



7. 3 is closer to _____ than 0.

8. 11 is closer to _____ than 15.

9. When rounding numbers you round "up" or "down" to the _____ number that you desire.

Refer to Example Set 1 to answer questions 10-16.

10. In a), 9 is rounded _____ to 10.

11. In a), 4 is then _____ by the 10.

12. In b), 9 × 12 = _____.

13. In b), both 9 and 12 are both rounded to _____.

14. In c), 4 is rounded up to _____.

15. In c), the 12 is rounded down to _____.

16. Numbers can be rounded to any place that is needed to obtain the _____ desired.

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Refer to Example Set 2 to answer questions 17-18.

17. 5,627,189 rounded to the *hundreds* place is _____.

18. 5,627,189 rounded to the *ten thousands* place is _____.

19. From Rule 1, if the digit to the right is 4 or less, round "_____," to keep the same value in the place being rounded.

20. From Rule 1, if the value to the right is 5 or more, round "_____;" add 1 to the value of the next digit in the place being rounded to.

21. A mathematical procedure used to make estimations of an outcome is called _____.

22. An estimate is a calculated _____.

23. Professor K rounded the actual cost in all but one case, to the nearest _____.

24. Estimations are very useful when shopping and determining whether you will have enough _____ when you get to the checkout register.

25. When estimating, unless otherwise instructed, round off numbers to make them _____ to calculate and estimate the answer.

Refer to Example Set 3 to calculate the estimated difference of the following numbers. Round to the nearest dollar.

26.
$375.73
- $125.65

27.
$107.15
- $26.83

28. Estimating the product of the multiplication of two numbers can be accomplished by the use of _____.

29. Professor K uses rounding for ***calculations*** accomplished in his_____.

30. In Example Set 4, 345 is rounded up to become _____.

31. In Example Set 4, 23 is rounded down to become_____.

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Refer to Example Set 4 to estimate the following factors and products. Write your answers on the blanks to the right of each problem.

32. 245 _____ (estimate)
× 28 _____ (estimate)
_____ (answer)

33. 815 _____ (estimate)
× 18 _____ (estimate)
_____ (answer)

34. 585 _____ (estimate)
× 48 _____ (estimate)
_____ (answer)

35. Answers are often rounded to a specific _____ value.

36. In Example Set 5, the 313 is rounded to the nearest _____ place.

37. In Example Set 5, the 1599 is rounded to the nearest _____ place.

Work these problems. Round your answers to the nearest tens place.

38. 84
× 3
→ _____

39. 72
× 2
→ _____

40. 112
× 4
→ _____

41. Repeating decimals are usually _____ off.

42. In Example Set 6, 1.6666 is rounded to _____.

43. In Example Set 6, 4.3333 is rounded to _____.

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Round the following repeating decimals to the nearest hundredths place.

44. 2.121212… _____

45. 1.01010101… _____

Round 6.2752 to the place value shown.

46. To *thousandths*: _____

47. To *hundredths*: _____

48. To *tenths*: _____

49. To *ones*: _____

50. Write the **Life Principle**: "_____
_____."

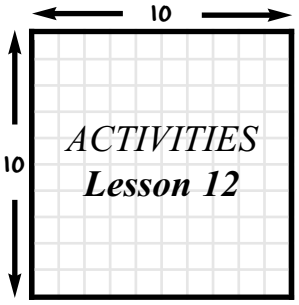
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Fractions



Ratios

You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Professor K can express a _____ by finding the ***ratio*** of two or more numbers.

2. People use _____ everyday without being aware of it.

3. Ratios are used when you calculate how many miles to the _____ of fuel a car gets.

4. The _____ on the dashboard of your car is a ratio that shows how fast you are traveling (miles per hour).

5. _____ parties look closely at the ratios of one electoral race to another race, men to women, young to old.

6. Political parties have used _____ to make sure certain voters are confined to particular voting districts.

7. The term, "***gerrymander,***" comes from the name of the governor of Massachusetts in 1812, Gov. Elbridge _____, combined with the word, *salamander*.

8. History provides much evidence of problems regarding _____ issues.

9. "Gerrymandering" was very prevalent after the _____ of 1860 - 1865.

10. Today, governing bodies watch very carefully for "gerrymandering" in an attempt to keep elections _____ to all voters.

11. A _____ is a comparison of two or more numbers.

12. Ratios may be written in _____ form with a fraction bar.

13. Ratios may also be written with a _____ between the two numbers being compared.

14. Which of the following is not an example of the representation of a ratio? _____

(a) $\frac{1}{2}$ or $1:2$ (b) $\frac{1}{3}$ or $1:3$ (c) $\frac{2}{9}$ or $2:9$ (d) $25+35$ or $25 \div 35$

15. $1:2$ stated in words is, "the ratio of _____."

16. $2:9$ stated in words is, "the ratio of _____."

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17. The final answer to a ratio problem must be written in reduced or _____ form when written in fraction or colon form.

Express the following ratios in reduced form. Remember, the symbol, ($\rightarrow$) means changes to, becomes or implies.

18. $\frac{2}{4} \rightarrow$ _____

19. $\frac{3}{9} \rightarrow$ _____

20. $2:4 \rightarrow$ _____.

21. $3:9 \rightarrow$ _____.

22. Table 12.1 shows the _____ of boys to girls in a math class at school A, and the number of boys to girls in a math class at school B.

Table 12.1

School	Boys	Girls	Total boys and girls
A	8	16	24
B	4	8	12

23. The ratio of the number of boys to girls in a math class in school A is _____.

24. The ratio of the number of boys to girls in each school is _____.

25. Calculate the ratio of boys in school B to the number of boys in school A. _____ (Be sure to simplify your answer)

26. Calculate the number of girls in school A to school B. _____ (Be sure to simplify your answer.)

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27. Often ratios are said to be _____.

28. A _____ is an equation of two ratios separated by an equal sign.

29. Two ratios are proportional if the fractions that represent those ratios are _____.

30. An equation represents a proportion if the products of the cross-multiplications are _____.

Write "Yes" on the blank if the ratios are proportional, "No" if they are not. Be sure to show your work in the space provided.

31. $^{5}/_{10} = {}^{50}/_{100}$ _____

32. $^{3}/_{6} = {}^{6}/_{12}$ _____

33. $^{2}/_{10} = {}^{10}/_{50}$ _____

34. $^{3}/_{6} = {}^{2}/_{3}$ _____

35. $^{1}/_{5} = {}^{2}/_{11}$ _____

36. $^{15}/_{21} = {}^{5}/_{7}$ _____

Refer to Example Set 1 to answer questions 37-40.

37. The number of girl students in the math class in school C is _____.

38. The ratio of boys to girls in school C is the same as for schools A and B. _____
(a) True or (b) False

39. $^{4}/_{8}$ = _____.

40. School C would have _____ boys and 30 girls in a math class.

Refer to Example Set 2 to answer questions 41-44.

41. A ratio of boys to the total number of students and a ratio of girls to the total number of students cannot be calculated. _____ (a) True or (b) False

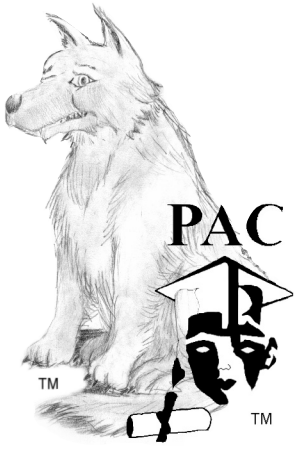
42. The ratio of boys to the total number of students in school A is _____.

43. The ratio of girls to the total number of students in school B is _____.

44. Calculate the ratio of the total number of students in school A to the total number of students in school B.

45. Write the **Life Principle:** "_____
_____."

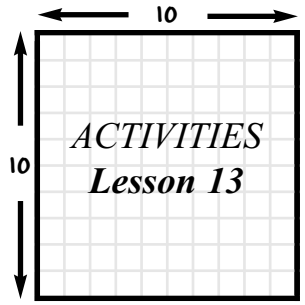
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Percent

Percents

You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. The word, _____, is derived from the Latin word *per centum*.

2. The Latin language is known as a _____ language.

3. A _____ language is not written or spoken anywhere in the world.

4. Many words have their _____ from the Latin language.

5. In Latin, *cent* or *centi-* means _____.

6. ***Percent*** means "for every _____."

7. A centurion commanded _____ soldiers.

8. A _____ is an ***era*** consisting of one hundred years.

9. The Mexican "penny" is known as a _____.

10. One hundred centavos equal one _____.

11. Governments require citizens to pay _____ and _____ taxes.

12. Stores _____ the prices of products by using percents.

13. Department stores mark-up their merchandise or have sales based on the percent of the _____ of the items.

14. _____ describes a whole object cut into one hundred pieces.

15. Using percents is a method of comparison, using _____ as the standard.

16. In the definition of percent, the letter, _____ represents a number.

17. 25% = _____ (fraction).

18. 17% = _____ (fraction).

19. The symbol, %, means the denominator of the fraction will always be _____.

20. 100% means _____ of something.

21. Example Set 1 shows how to change percents to _____ and then to _____.

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22. The easiest way to change a percent to a decimal is to move the decimal point (whether written or assumed) _____ places to the _____ and drop the denominator or the % symbol.

23. Another way to find the decimal equivalent is to _____ the number by 100.

24. 66.6% = _____ (decimal).

25. 125% = _____ (decimal).

26. 50% = _____ (decimal).

27. Multiplying a decimal by 100 moves the decimal point _____ places to the _____.

28. .25 = _____ %.

29. 1.75 = _____ %.

30. .024 = _____ %.

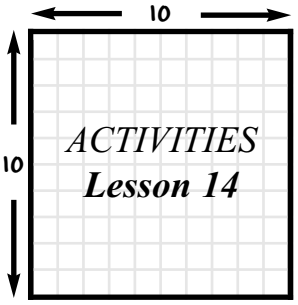
31. 2.5 = _____ %.

32. Write the **Life Principle**: "_____ _____."

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Name: _____

Date: _____ Grade: _____





Percent

Problems Involving Percent

You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. The definition of percent is: n% = _____.

2. Percent problems come in _____ forms.

Refer to Example Set 1 to answer questions 3-12.

3. The finance company required _____ percent as a down payment.

4. A _____ was set up to work the problem.

5. 20% = _____(fraction)

6. To solve the proportion, you must _____.

7. "lhs" means _____ of the equation.

8. The *d* as the _____ quantity, must be set apart on the _____ side of the equation.

9. You must perform the _____ operation to both sides of an equation.

10. The last step is to solve the _____.

11. rhs means _____

12. The required down payment is _____.

Refer to Example Set 2 to answer questions 13-19.

13. Mandy obtained the money to ***invest*** by _____ a summer job.

14. Mandy received _____ ***interest*** rate on her money.

15. Mandy earned _____ in one year on her investment.

16. The fractional representation of the interest rate is _____.

17. After _____ the resulting equation was: $m \times 15 = 375 \times 100$.

18. The unknown "*m*" must be isolated on the _____ of this problem by _____ both sides of the equation by 15.

19. To find that Mandy invested _____, the rhs was simplified.

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Refer to Example Set 3 to answer questions 20-24.

20. A _____ is set up to work the percent problem.

21. The denominator of the lhs is _____

22. "n" is isolated by _____ both sides of the equation by _____.

23. 200 is _____ of 800.

24. The easiest way to remember how to do any kind of percent problem is to memorize the following proportion: _____, then substitute the numbers given in the problem.

Solve the following equations involving percent. Show your work in the space provided. Use the proportion formula from question 24.

25. 25% *of* 100 *is* _____.

26. 10% *of* 200 *is* _____.

27. 15% *of* 600 *is* _____.

28. 25% *of* a number *is* 250. What is the number? _____

29. Sam invested $3500.00 for one year and received $700.00 in interest. What was the interest rate (percent) Sam received on his money? (Hint: word the problem another way—$700.00 interest is what percentage of $3,500.00?)

30. 75% *of* 40 *is* _____.

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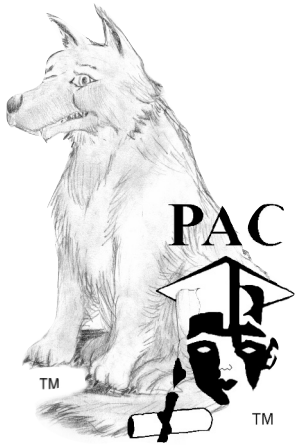
31. 144 *is* what percent *of* 240? _____

32. 100% of $2,000.00 is _____. (You may do this one without showing any work.)

33. The stock of a local company increased in value by $\frac{1}{8}$. By what percent did the stock increase in value? _____ If Thomas owned $8000.00 in stock of this company, how much was his stock worth now? (Hint: Find the percent of increase in the value of the stock and then add that number to $8000.00)_____

34. Write the **Life Principle:** "_____
_____."

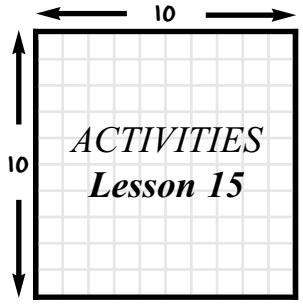
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Name: _____

Date: _____ Grade: _____





Percent

Simple Interest

You are making progress! ***Answer the following questions. Choose the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Professor K and his wife wanted to purchase a new _____.

2. Professor K acquired a _____ loan.

3. Professor K told his wife that it was _____ to figure ***simple interest***.

4. A _____ exists to calculate the amount of interest to be paid.

5. Once the substitutions are completed, the _____ are performed.

6. Professor K proceeded to ***enlighten*** his wife on the calculation of _____.

7. To make known is to _____.

8. Figuring _____ is a method to determine the amount of interest owed on a loan or earned on an investment.

9. Money given out or put into a project expecting an income or profit is an _____.

10. Simple interest is calculated using the formula ____= _____.

11. *P* stands for _____.

12. *r* stands for _____.

13. *t* stands for _____.

Refer to Example Set 1 to answer questions 14-16.

14. The interest rate was _____.

15. The amount of time calculated was _____ year.

16. The amount of interest Professor K will pay on his loan the first year is _____.

Write the Simple Interest formula and complete the following interest problems. Show your work and write your answer on the blank.

17. I = _____, (r = 4%, t = 4 years, principal = $1000.00)

$I = 1000 \times .04 \times 4$ = _____

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18. I = _____, r = 3%, t = 3 years, principal = $2000.00
$I = 2000 \times .03 \times 3 =$ _____

19. I = _____, r = 1%, t = 1 years, principal = $2000.00
$I = 2000 \times .01 \times 1 =$ _____

20. I = _____, r = 10%, t = 2 years, principal = $1000.00
$I = 1000 \times .10 \times 2 =$ _____

21. I = _____, r = 5%, t = 5 years, principal = $2000.00
$I = 2000 \times .05 \times 5 =$ _____

22. I = _____, r = 20%, t = 5 years, principal = $10000.00
$I = 10000 \times .20 \times 5 =$ _____

23. I = _____, r = 10%, t = 2 years, principal = $20000.00
$I = 20000 \times .10 \times 2 =$ _____

24. I = _____, r = 10%, t = 5 years, principal = $30000.00
$I = 30000 \times .10 \times 5 =$ _____

25. I = _____, r = 3%, t = 3 years, principal = $2000.00
$I = 2000 \times .03 \times 3 =$ _____

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26. I = _____, r = 30%, t = 30 years, principal = $2000.00
$I = 2000 \times .30 \times 30$ = _____

Refer to Example Set 2 to answer questions 27-30.

27. The principle amount of the investment was _____.

28. The interest rate was _____.

29. The time of the investment was _____.

30. The simple interest earned on an investment of $50,000.00 after 2 years at a 4% interest rate was _____.

Write the Simple Interest formula and complete the following interest problems. Show your work and write your answer on the blank.

31. I =_____, r = 15%, t = 10 years, principal = $10000.00
$I = 10000 \times .15 \times 10$ = _____

32. I =_____, r = 10%, t = 10 years, principal = $20000.00
$I = 20000 \times .10 \times 10$ = _____

33. I =_____, r = 20%, t = 20 years, principal = $30000.00
$I = 30000 \times .20 \times 20$ = _____

34. I =_____, r = 10%, t = 10 years, principal = $25000.00
$I = 25000 \times .10 \times 10$ = _____

35. I =_____, r = 20%, t = 10 years, principal = $500000.00
$I = 500000 \times .20 \times 10$ = _____

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Calculate the following interest problems using the formula $I = P \times r \times t$. Show your work in the space provided and place your answer on the blank.

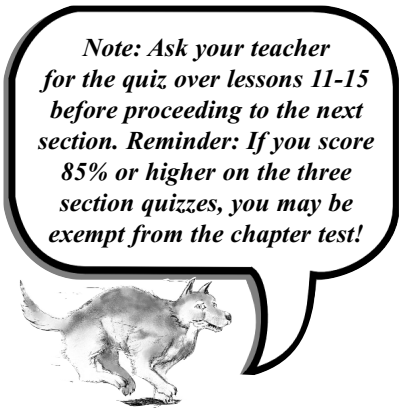
36. Professor K's brother made an investment of $6,000.00 at 10% for 2 years. Calculate the amount of interest the investment earned. I = _____

37. Professor K's aunt acquired a loan for a new car. The cost of the car was $15,000.00. The simple interest rate was 8%. Calculate the interest Professor K's aunt paid the first year. I = _____

38. Calculate the simple interest paid on an investment of $2,000.00 at 5% for 5 years. I = _____

39. Learning how to do interest calculations can assist you in your own _____ as you desire to invest or borrow money.

40. Write the **Life Principle:** "_____ _____."



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Basic Math Skills

Mathematics Charts

LENGTH - ENGLISH SYSTEM

12 inches	=	1 foot
3 feet	=	1 yard
5.5 yards	=	1 rod
320 rods	=	1 mile
1,760 yards	=	1 mile
5,280 feet	=	1 mile

VOLUME - ENGLISH SYSTEM

1 tablespoon, Tbsp, T	=	3 teaspoons, tsp
1 cup, c	=	16 tablespoons, Tbsp, T
1 pint, pt	=	2 cups, c
1 quart, qt	=	2 pints, pts
1 gallon, gal	=	4 quarts, qts

WEIGHT - ENGLISH SYSTEM

1 pound, lb	=	16 ounces, oz
1 hundredweight, cwt	=	100 pounds, lbs
1 ton	=	20 hundredweight, cwt
1 ton	=	2000 pounds, lbs

LENGTH - METRIC SYSTEM

1 meter	=	1,000 millimeters
1 meter	=	100 centimeters
1 kilometer	=	1,000 meters
1 centimeter	=	10 millimeters

VOLUME - METRIC SYSTEM

1 liter	=	1,000 milliliters
1 liter	=	100 centiliters
1 kiloliter	=	1,000 liters
1 centiliter	=	10 milliliters

WEIGHT - METRIC SYSTEM

1 gram	=	1,000 milligrams
1 gram	=	100 centigrams
1 kilogram	=	1,000 grams
1 centigram	=	10 milligrams

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Mathematics Charts

PERFECT SQUARES

$\sqrt{1}=1$	$\sqrt{25}=5$	$\sqrt{81}=9$	$\sqrt{169}=13$
$\sqrt{4}=2$	$\sqrt{36}=6$	$\sqrt{100}=10$	$\sqrt{196}=14$
$\sqrt{9}=3$	$\sqrt{49}=7$	$\sqrt{121}=11$	$\sqrt{225}=15$
$\sqrt{16}=4$	$\sqrt{64}=8$	$\sqrt{144}=12$	$\sqrt{256}=16$

PERFECT CUBES

$\sqrt[3]{1}=1$	$\sqrt[3]{-8}=-2$	$\sqrt[3]{64}=4$	$\sqrt[3]{-125}=-5$
$\sqrt[3]{-1}=-1$	$\sqrt[3]{27}=3$	$\sqrt[3]{-64}=-4$	$\sqrt[3]{216}=6$
$\sqrt[3]{8}=2$	$\sqrt[3]{-27}=-3$	$\sqrt[3]{125}=5$	$\sqrt[3]{-216}=-6$

$$P = \frac{\text{the number of elements in the set containing favorable outcomes}}{\text{the number of elements in the sample set}}$$

$$\textit{Midpoint} = \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$$

FORMULAS

Surface Area	Area	Volume	Perimeter/ Circumference	Others
Sphere: $A_s = 4\pi r^2$	**Triangle:** $A = {}^1\!/_2 bh$	**Sphere:** $V = {}^4\!/_3 \pi r^3$	**Perimeter of a Rectangle:** $P = 2w + 2l$	**Pythagorean Theorem:** $c^2 = a^2 + b^2$
Cylinder: $A_s = 2\pi rh + 2\pi r^2$	**Rectangle:** $A = l \times w$	**Cone:** $V = {}^1\!/_3 \pi r^2 h$	**Circumference of a Circle:** $C = 2\pi r$ or $C = \pi d$	**Convert to Fahrenheit:** $F = {}^9\!/_5 C + 32$
Cube: $A_s = 6s^2$	**Circle:** $A = \pi r^2$	**Rectangular Prism:** $V = l \times w \times h$		**Convert to Celsius:** $C = {}^5\!/_9 (F - 32)$
Lateral Surface Area of a Cone: $A_{ls} = \pi rl$	**Trapezoid:** $A = {}^1\!/_2 (b_1 + b_2)h$	**Square Pyramid:** $V = ({}^1\!/_3) lwh$		**Distance:** $d = r \bullet t$
		Triangular Prism: $V = {}^1\!/_2 bhl$		**Slope:** $y = mx = b$
		Cylinder: $V = \pi r^2 h$		**Simple Interest:** $I = prt$

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Mathematics Charts

TIME CONVERSIONS

1 week = 7 days
1 year = 12 months

CONVERSIONS

English to Metric	
1 ounce (oz)	28.35 grams (g)
1 pound (lb)	454 grams (g)
1 ton (T)	907.2 kilograms (kg)

Metric to English	
1 gram (g)	.035 ounce (oz)
1 kilogram (kg)	2.2 pounds (lb)
1 metric ton (mt)	2200 pounds (lb)

English to Metric	
1 cubic inch	16.39 cubic cm
1 gallon	3.785 liters
1 cubic foot	28.316 liters
1 quart	.946 liters

Metric to English	
1 cubic cm	.061 cubic inch
1 cubic meter	35.315 cubic feet
1 liter	1.05 quarts
1 liter	.264 gallon

English to Metric	
1 inch	2.54 cm
1 foot	0.3048 meter
1 yard	0.9144 meter
1 mile	1.6 km

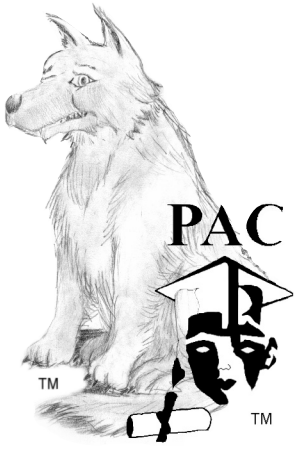
Metric to English	
1 centimeter	0.3937 in.
1 meter	39.37 in.
1 meter	1.09 yds
1 kilometer	0.6213 mile

AREA CONVERSIONS

1 square centimeter = 0.155000 sq in.
1 square meter = 10.763910 sq ft
1 square inch = 645.16 sq mm
1 square foot = 0.09290304 sq meter
1 square yard = 0.836127 sq meter
1 square foot = 144 sq in.

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