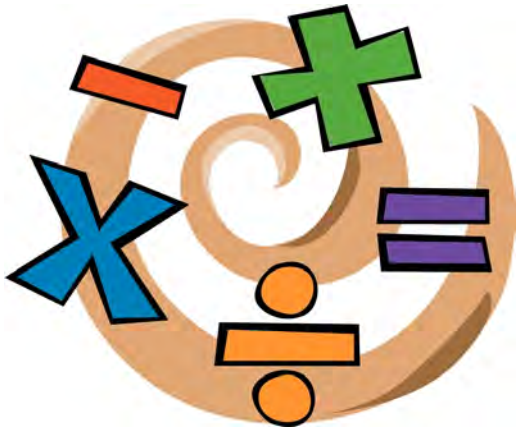
ABE/GED Mathematics Activities & Student Worksheets



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NH Bureau of Adult Education Mini-Grant
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ABE/GED Mathematics Activities & Student Worksheets Index

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Math Can Be Fun !

Math skills can be taught , practiced and reinforced in many different ways. There are a variety of alternatives to the big GED books and the giant lists of problems found in some workbooks. Math games and activities can be used in the GED classroom to engage students in the learning process while having fun. Worksheets can easily be modified, used in a variety of ways and turned into activities. Examples of this can be found throughout this booklet.

Following is a summary of an article from Steve Sugar on "Ten of the Very Best Reasons for Using Classroom Games". (*www.thegamegroup.com*)

- Games are fun with a purpose.
- Games give the student and teacher immediate feedback.
- Games provide an environment that transforms the passive student into an active part of the learning process.
- Games engage players and motivate them to interact with the topic.
- Games encourage collaborative learning and team work.
- Games accelerate the rate of learning.
- Games allow the teacher to be flexible and add variety to their lessons.
- Games can be customized to any size class, even one-on-one

General Game & Activity Ideas

1. One way of turning a worksheet into an activity is by playing MATHO.

Using the game sheet found on the following page, turn any worksheet into an activity. Write the answers to a worksheet (16 to 20 answers) on the board and have students copy the answers onto different squares on their game board. They then match the problem number on their worksheet with the answers on their game board by writing the answer in the circle.

Turn the worksheet into a game by having students work independently or in teams to be the first to get 4 matches in a row, column or diagonal or to be the first to match all the questions and answers.

2. Use index cards in a variety of ways

Write questions on one index card and the answers on another in a different color. Students may also want to do this part. In teams or independently, have students match questions with answers. They could also play "Concentration". Depending on the topic, the teacher could also deal out the questions or the answer cards to students and have them match orally. The first one to get rid of their cards wins.

3. Play I Have-Who Has

This game can be played using a variety of different math topics. For example, to practice whole number computation and vocabulary, prepare index cards prior to the beginning of the activity. One card must be the "Begin Card", start with that one. The rest of the cards must follow using problems that include one or more of the basic functions and the answer to another. Each card must connect to another. ***For example:***

" Who has 10 x 10 ?" (this is the beginning card)
" I have 100, who has 100/10 ?"
"I have 10, who has 25 + 150 ?"
ect…….ect…….ect……

This game is fun to play with a small group, but could also be used independently. The student could match the cards in a line on the table. Students may also want to make their own set of cards.

The possibilities are endless.

4. Check out Florida's collection of ABE, Pre-GED and GED lesson plans.

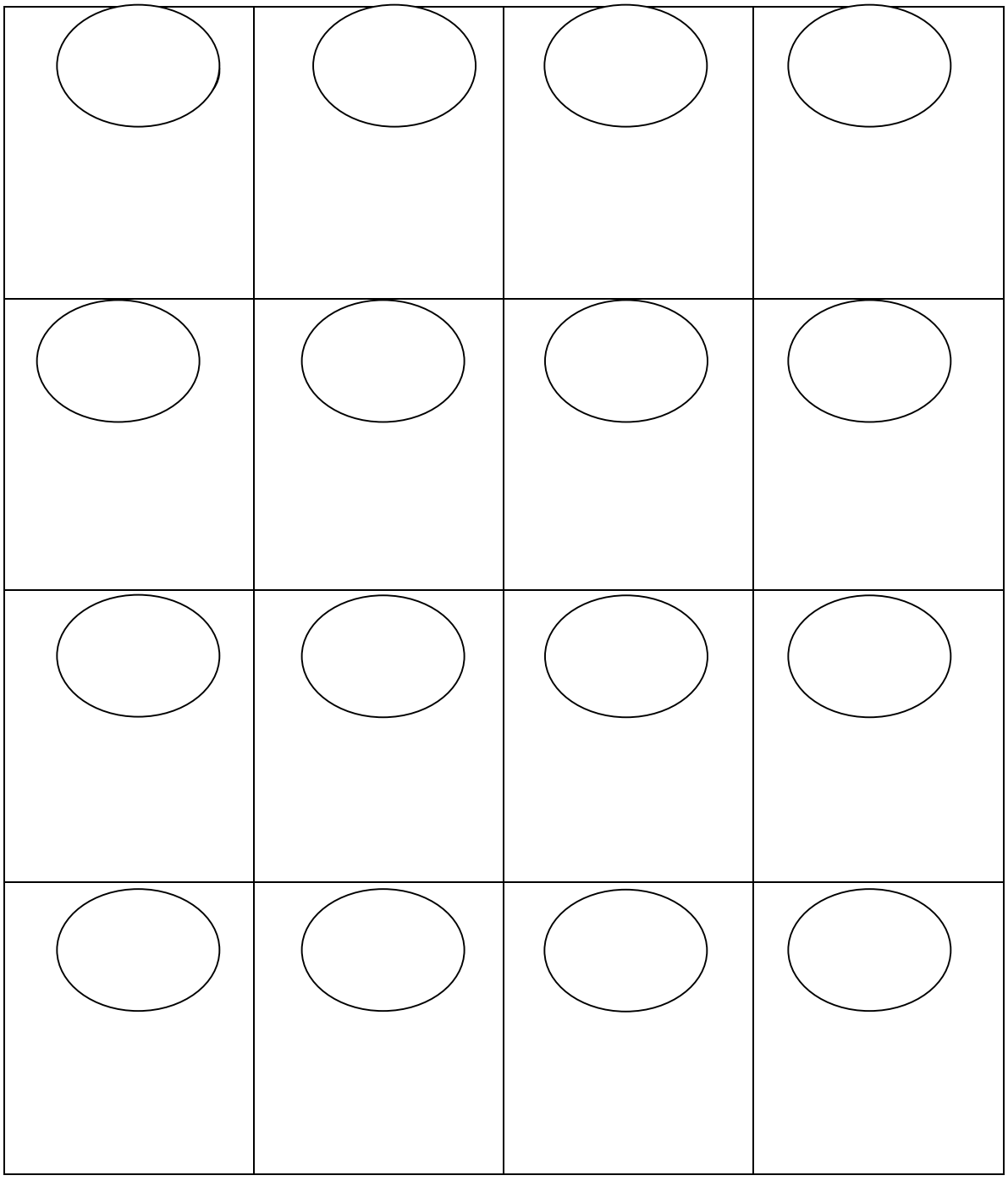
For 50 GED Math Lessons go to:
www.floridatechnet.org/GED/LessonPlans/Mathematics/Mathematics.htm

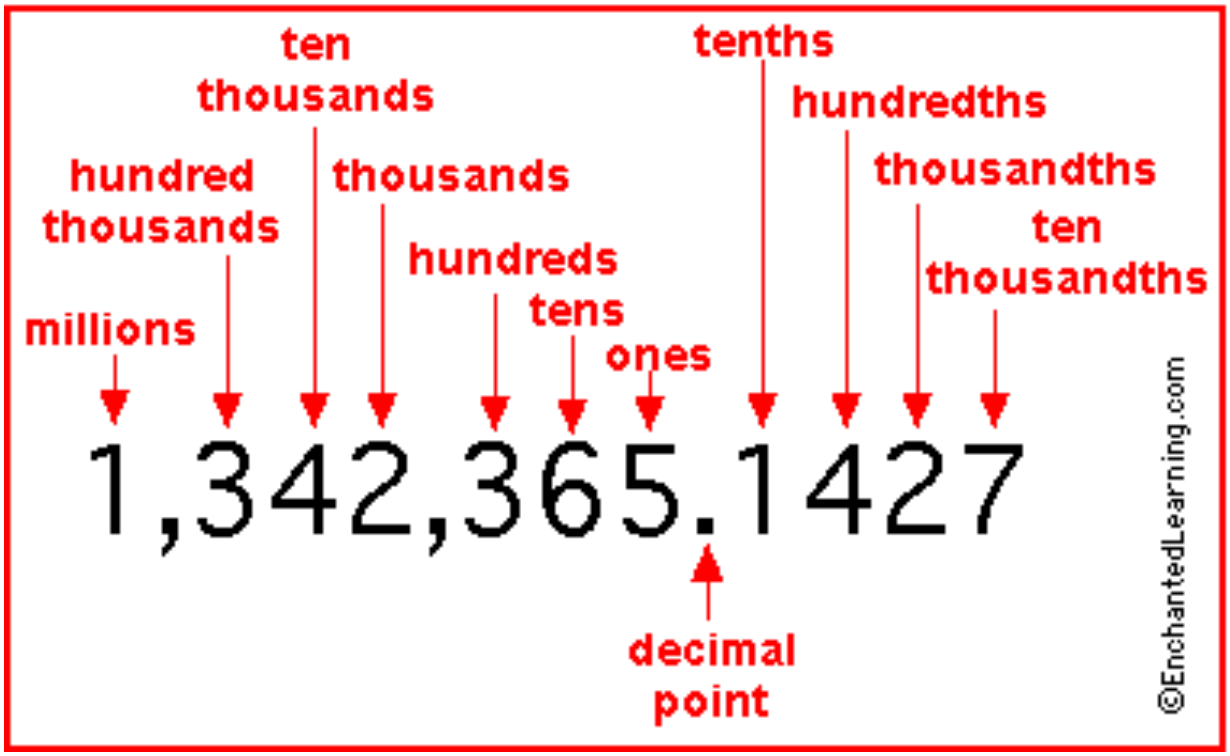
For excellent Pre-GED Lessons that include worksheets go to:
www.floridatechnet.org/2005PreGED/Pre-GED%20math.pdf

For ABE lessons on levels 1 to 8.9 that include worksheets go to:
www.abeflorida.org/resources.html Scroll down to Learning Activities Resource Guide and click on the level you are interested in.

The Matho Game sheet is on the next page. An example of how it's used is on pages 74 –75 in the Algebra section.

MATHO





Place Value Chart

Name _____ Date _____

Place Value

Write the place and the value of the underlined digit.

1. 30,0**3**0 ***tens or 30***	2. **2**0,088	3. 8,**6**14	4. 32,57**4**
5. **2**,230	6. 8**7**,953	7. 8,0**0**4	8. 5,67**5**
9. 91,04**3**	10. 84,9**2**9	11. **1**,066	12. 4,3**0**0
13. 1**8**,305	14. 93,38**8**	15. **7**,330	16. 69,6**6**9
17. 1,**7**78	18. 2,8**0**9	19. 72,14**9**	20. **7**,977
21. 2,**7**61	22. 7,4**8**5	23. 3,07**2**	24. 54,98**6**
Adapted from EdHelper.com			

Place Value

Write each number in standard form.

1. 40 + 300 + 9,000 + 40,000	2. 7 + 50,000 + 700
3. 2 hundreds 5 thousands 4 ones 9 tens	4. eight thousand, six hundred eighty-three
5. fifty-eight thousand, five hundred eighty-nine	6. 5 ten thousands 9 ones 5 thousands
7. 8 + 30 + 200 + 9,000	8. thirty-three thousand, one hundred twenty-eight
9. 3,000 + 900 + 3 + 70	10. six thousand, five hundred twelve
11. sixteen thousand, nine hundred sixty-five	12. 5 + 600 + 7,000 + 20,000
13. eighty-nine thousand, eight hundred twenty-nine	14. 50 + 2 + 2,000 + 200
15. 6 tens 5 thousands 4 hundreds	16. forty-one thousand, seven hundred seventy-two
17. sixty-two thousand, six hundred seventy	18. 8 thousands 9 ones 7 hundreds 8 tens
19. 60 + 4,000 + 600 + 5	20. 70,000 + 700 + 4 + 70 + 7,000
	Adapted from edhelper.com

NUMBERS, NUMBERS, NUMBERS

Arrange these numbers so that they answer the questions below:

1 3 5 7 2

1. Largest possible number _____
2. Smallest possible number_____
3. Largest even number_____
4. Smallest even number_____
5. Largest odd number_____
6. Smallest odd number_____
7. Largest number divisible by 5 _____
8. Smallest number divisible by 5 _____
9. Largest number divisible by 3 _____
10. Smallest number divisible by 3 _____

1	***3***	***5***	***7***	***2***

Students can cut and manipulate the number squares above and use them as an aid to answer the questions.

NUMBERS, NUMBERS, NUMBERS

Arrange these numbers so that they answer the questions below:

_____

2. Largest possible number _____

2. Smallest possible number_____

3. Largest even number_____

4. Smallest even number_____

5. Largest odd number_____

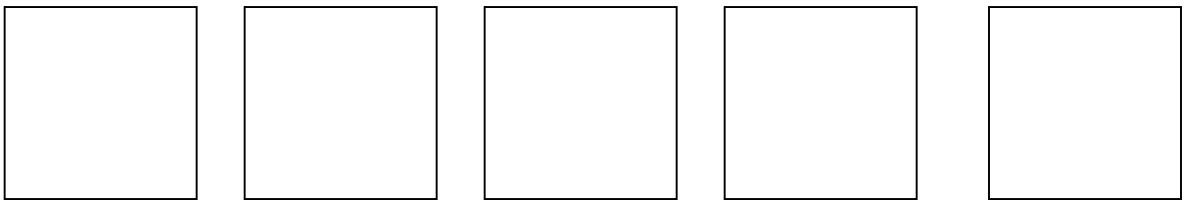
6. Smallest odd number_____

7. Largest number divisible by 5 _____

8. Smallest number divisible by 5 _____

9. Largest number divisible by 3 _____

10. Smallest number divisible by 3 _____



Use your own numbers or have students come up with their own.

Name_____ Date_____

Rounding Whole Numbers

***Tip*…. Put a dot over the number in the place you are rounding to. This is the number that will stay the same or go up one. Look at the number after the dot to decide. 5 or bigger and the number goes up, smaller than 5 and the number stays the same.**

1. **Round the following numbers to the nearest ten:**

   a) 89 _____ d) 514 _____

   b) 2,673 _____ e) 97 _____

   c) 265 _____ f) 2,753 _____

2. **Round the following numbers to the nearest hundred:**

   a) 847 _____ d) 333 _____

   b) 2,978 _____ e) 5,496 _____

   c) 5,048 _____ f) 555 _____

3. **Round the following numbers to the nearest thousand:**

   a) 14,389 _____ d) 9,520 _____

   b) 29,610 _____ e) 56,239 _____

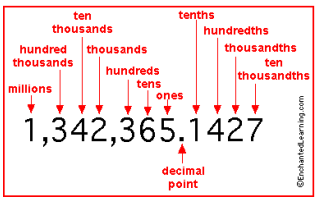
   c) 3,492 _____ f) 89,743 _____

4. **Round the following numbers to the nearest ten-thousand:**

   a) 24,987 _____ d) 24,033 _____

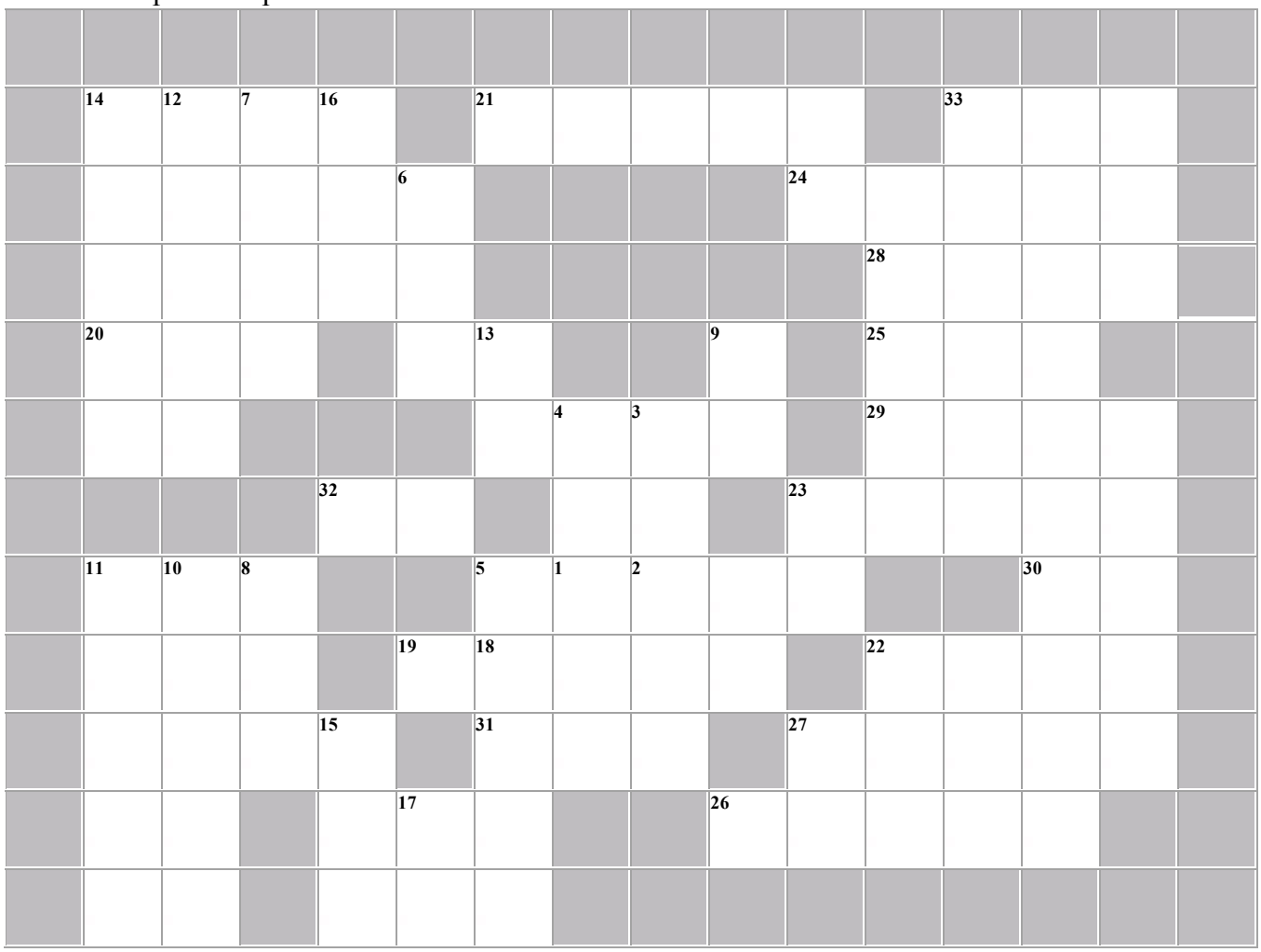
   b) 37,096 _____ e) 295,474 _____

   c) 145,302 _____ f) 77,330 _____



Rounding Whole Numbers

Complete the puzzle.



Down

1. Round 376 to the nearest hundreds place.
2. Round 11 to the nearest tens place.
3. Round 43,120 to the nearest hundreds place.
4. Round 65,369 to the nearest hundreds place.
5. Round 12,306 to the nearest hundreds place.
6. Round 833 to the nearest hundreds place.
7. Round 5,692 to the nearest thousands place.
8. Round 691 to the nearest tens place.
9. Round 75 to the nearest tens place .
10. Round 38,283 to the nearest tens place.
11. Round 37,449 to the nearest thousands place.
12. Round 14,528 to the nearest thousands place.
13. Round 92 to the nearest tens place.
14. Round 99,812 to the nearest tens place.
15. Round 728 to the nearest tens place.
16. Round 539 to the nearest hundreds place.
17. Round 18 to the nearest tens place.

Across

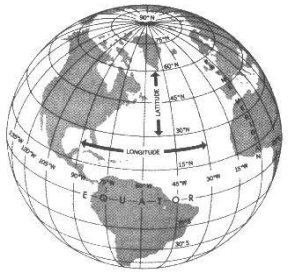
5. Round 14,161 to the nearest tens place.
18. Round 162 to the nearest hundreds place.
19. Round 52,081 to the nearest thousands place.
20. Round 96 to the nearest tens place.
21. Round 77,846 to the nearest tens place.
22. Round 9,038 to the nearest thousands place.
23. Round 71,018 to the nearest tens place.
24. Round 74,314 to the nearest hundreds place.
25. Round 879 to the nearest hundreds place.
26. Round 56,291 to the nearest thousands place.
27. Round 89,899 to the nearest thousands place.
28. Round 7,891 to the nearest hundreds place.
29. Round 3,940 to the nearest thousands place.
30. Round 63 to the nearest tens place.
31. Round 255 to the nearest hundreds place.
32. Round 40 to the nearest tens place.
33. Round 781 to the nearest tens place.

Adapted from edhelper.com

WORLD POPULATION MATH

Use the following World Population Chart to practice a variety of math skills with your students. You could use any interesting information that contains numbers in the same way.

- Have students estimate the population of the world or of the United States
- Have students read and write their numbers
- Order the estimates
- Determine how far off (or how close) the estimates are
- Have students brainstorm what they think are the 10 largest countries in the world (not math but useful social studies information)
- Practice reading the large numbers once the chart is given out
- Round off the numbers
- Use the population numbers to review place value (Switch the numbers in the thousands place and millions place in the population of China and read the new number. What number is in the ten-thousands place in the population of Iran?)
- Create word problems (How many more people live in China than the USA?)



Rank	Country	Population	Date of Information
1	**World**	6,677,563,921	July 2008 est.
2	**China**	1,330,044,605	July 2008 est.
3	**India**	1,147,995,898	July 2008 est.
4	**European Union**	491,018,677	July 2008 est.
5	**United States**	303,824,646	July 2008 est.
6	**Indonesia**	237,512,355	July 2008 est.
7	**Brazil**	191,908,598	July 2008 est.
8	**Pakistan**	167,762,040	July 2008 est.
9	**Bangladesh**	153,546,901	July 2008 est.
10	**Russia**	140,702,094	July 2008 est.
11	**Nigeria**	138,283,240	July 2008 est.
12	**Japan**	127,288,419	July 2008 est.
13	**Mexico**	109,955,400	July 2008 est.
14	**Philippines**	92,681,453	July 2008 est.
15	**Vietnam**	86,116,559	July 2008 est.
16	**Germany**	82,369,548	July 2008 est.
17	**Egypt**	81,713,517	July 2008 est.
18	**Ethiopia**	78,254,090	July 2008 est.
19	**Turkey**	71,892,807	July 2008 est.
20	**Congo, Democratic Republic of the**	66,514,506	July 2008 est.
21	**Iran**	65,875,223	July 2008 est.
22	**Thailand**	65,493,298	July 2008 est.
23	**France**	64,057,790	July 2008 est.
24	**United Kingdom**	60,943,912	July 2008 est.
25	**Italy**	58,145,321	July 2008 est.

WORLD POPULATION

Name _____ Date_____

Exponents

$5^2 = 5 \times 5 = 25$ 5 is the base number and 2 is the exponent.
The exponent tells you how many times to multiply the base number by itself.

Find the value.

1. $2^2 =$	2. $4^2 =$
3. $3^2 =$	4. $8^2 =$
5. $6^2 =$	6. $5^2 =$
7. $9^2 =$	8. $10^2 =$
9. $7^2 =$	10. $5^3 =$
11. $2^3 =$	12. $3^3 =$
13. $11^2 =$ **Use a Calculator for the following :**	14. $4^3 =$
15. $14^2 =$	16. $15^2 =$
17. $8^3 =$	18. $10^3 =$
19. $12^3 =$	20. $10^5 =$

1^2	1
2^2	4
3^2	9
4	16
5^2	25
6^2	36
7^2	49
8^2	64
9^2	81
10^2	100
11^2	121
12^2	144

EXPONENT MATCH

Cut along the lines. Have students match the exponents to their value. This activity can be completed independently or as a team. They can also be used as flashcards.

Name _____ Date _____

Order of Operations

1. $7 \times 9 + 3 \times 1$	2. $62 + 5 \times 12 - 2$
3. $90 - 40 + 40 \times 2$	4. $24 \div 2 + 5^2$
5. $75 + 25 - 10 \times 4$	6. $1 + 5 \times 9 \div 9$
7. $(81 \times 2) - 4^2$	8. $24 - 2^2 \times 5$
9. $5(10 + 10) \div 10$	10. $(88 + 5) + 15 \times (3 - 1)$
11. $9 (15+ 25) + 35 \div 7$	12. $47 - 32 + 5^2 \times 2$

13. $93 - 1 \times 2^2$	14. $12 + 60 \div 6 \times 52$
15. $9^2 - 5 \times 12$	16. $56 \div 8 \times 4$
17. $(8 \times 7) - 55 + 5 \times 2$	18. $12 + 24 \div 4 - 3$
19. $60 \times 4 - 25 \times 2^3$	20. $50 + 7 \times 8 - 3 \times 2$

FOLLOW THE ORDER OF OPERATIONS

1. Do what's in Parenthesis first ( )
2. Do all Exponents and square roots
3. Multiply and Divide, left to right, *whichever comes first*
4. Add and Subtract, left to right, *whichever comes first*

Please Excuse My Dear Aunt Sally

U.S. Department of Labor

in the 21st Century

elaws® - Fair Labor Standards Act Advisor

What is the minimum wage?

The federal minimum wage provisions for covered, nonexempt employees are contained in the Fair Labor Standards Act. The Fair Minimum Wage Act of 2007 included phased increases to the federal minimum wage.

- For work performed prior to July 24, 2007, the federal minimum wage is $5.15 per hour.
- For work performed from July 24, 2007 to July 23, 2008, the federal minimum wage is $5.85 per hour.
- For work performed from July 24, 2008 to July 23, 2009, the federal minimum wage is $6.55 per hour.
- For work performed on or after July 24, 2009, the federal minimum wage is $7.25 per hour.

Many states also have minimum wage laws. Where an employee is subject to both the state and federal minimum wage laws, the employee is entitled to the higher of the two minimum wages.

Various minimum wage exceptions apply under specific circumstances to workers with disabilities, full-time students, youth under age 20 in their first 90 consecutive calendar days of employment, tipped employees and student-learners.

UNITED STATES DEPARTMENT OF LABOR EMPLOYEE INFORMATION

Use the US Dept. of Labor Wage and Hour Division Basic Information page to help answer the following questions.

1. What is the present federal minimum wage ? _____
2. What is the overtime rate ? _____
3. What will the federal minimum wage be in August of 2009 ? _____
4. If you earn $6.50 an hour, what would your hourly overtime pay be ? _____
5. If you earn $6.55 an hour, what would your gross pay be for 20 hours? _____
6. If you earn $6.55 an hour, what would your gross pay be if you worked 40 hours. _____
7. If you earn $7.25 an hour, what would your gross pay be for 20 hours? _____
8. What is the hourly overtime rate if you earn $7.50 an hour ? _____
9. If you earn $10.00 per hour, what would your gross pay be if you worked 50 hours in one week (include overtime) ? _____
10. How much has the minimum wage increased since before July 24, 2007 ? _____

PLACE VALUE CARD GAME

Students take turns drawing a card and placing them on their number sheet. Each person uses a deck of cards from 1 - 9. Once you have placed a card, it cannot be changed.

The object of the game is to make the highest number. At the end, when all spaces are filled, students take turns reading their number out loud. A point is given for the highest number.

After students have played with six number spaces __ __ __ __ __ __ they could add two more number spaces, so it will look like this: __ __ __ __ __ __ __ __. For a real challenge, add even more spaces.

Another challenge is to place a decimal point onto your game sheet and repeat the game.

For example: __ __ __ • __ __

X- CARDS (1 TO 5 FACTS)

SKILL: Review and practice of multiplication facts to 50

PLAYERS: Two of equal skill level

EQUIPMENT: Cards (Ace = 1) - 10

Players divide the cards into two piles. Cards A - 5 are in one pile, and cards 6 - 10 are in another pile. Each player has one pile of cards. At the same time, each player turns over a card. Players multiply the two cards. The first player who says the correct answer out loud, collects both cards.

In the event of a tie, players leave their cards face down and let the pile build. Play resumes until one player gives the correct answer before the other and collects all of the accumulated cards.

Play continues until the common piles are finished. Players count up their cards to determine the winner. ******* ***This game doesn't need to be a competition, students can take turns or play cooperatively.***

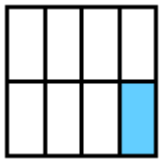
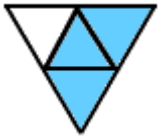
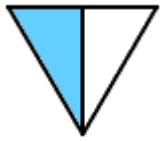
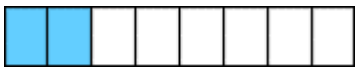
X- CARDS (1 – 9 FACTS)

Players divide the number cards equally (ace – ten) and follow the rules above.

Name _____ Date _____

Writing Fractions

Write a fraction to show how much of the shape is shaded.

1. 	2. 	3. 
4. 	5. 	6. 
7. 	8. 	9. 
10. 	11. 	12. 
13. 	14. 	15. 
16. 	17. 	18. 

For extra practice, go back and write the fraction that **is not** shaded.

Adapted from edhelper.com

Name _____ Date _____

Drawing Fractions

Draw a picture to show the fraction.

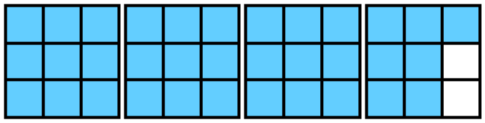
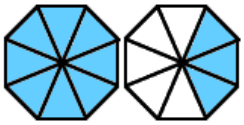
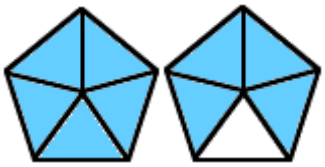
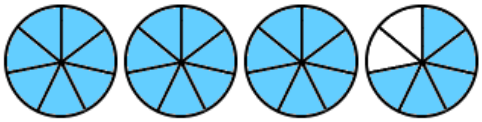
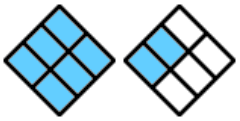
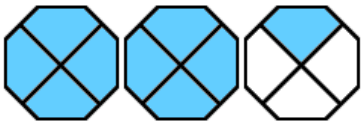
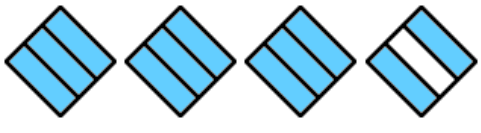
1. eight-tenths	2. $\frac{2}{5}$	3. one-half
4. $\frac{3}{7}$	5. $\frac{2}{3}$	6. $\frac{4}{9}$
7. five-eighths	8. five-sixths	9. $\frac{3}{4}$

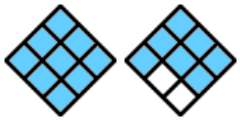
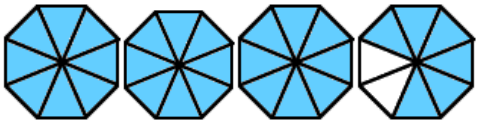
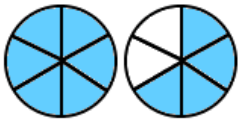
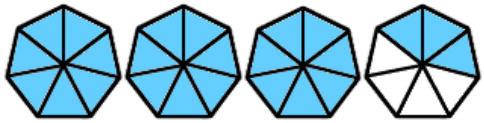
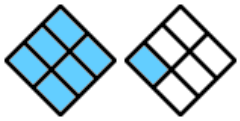
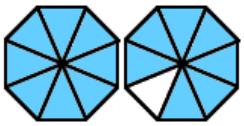
DMR

Name _____ Date _____

Mixed Numbers

Write a mixed number and improper fraction for the parts that are shaded.

1. 	2. 
3. 	4. 
5. 	6. 
7. 	8. 
9. 	10. 

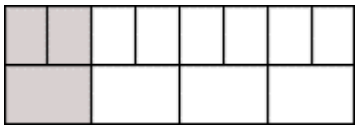
11. 	12. 
13. 	14. 
15. 	16. 
17. 	18. 
19. 	20. 

Adapted from edhelper.com

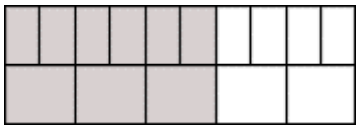
Name _____ Date _____

Equivalent Fractions

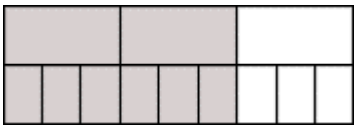
Fill in the missing number to make two equivalent fractions.

1. 

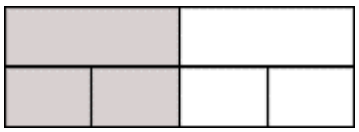
$\frac{2}{8} = \frac{\square}{4}$

2. 

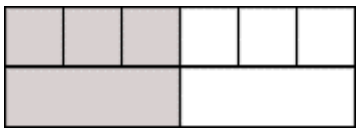
$\frac{\square}{10} = \frac{3}{5}$

3. 

$\frac{\square}{3} = \frac{6}{9}$

4. 

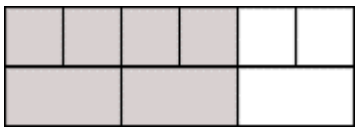
$\frac{1}{2} = \frac{\square}{4}$

5. 

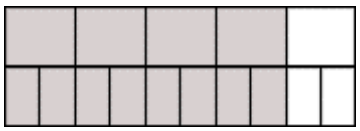
$\frac{3}{6} = \frac{\square}{2}$

6. 

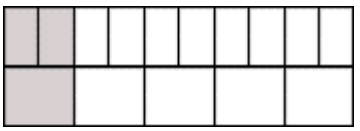
$\frac{3}{4} = \frac{\square}{8}$

7. 

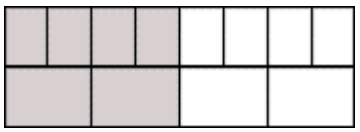
$\frac{\square}{6} = \frac{2}{3}$

8. 

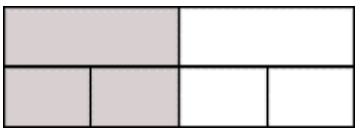
$\frac{\square}{5} = \frac{8}{10}$

9. 

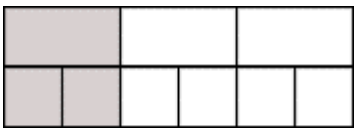
$\frac{\square}{10} = \frac{1}{5}$

10. 

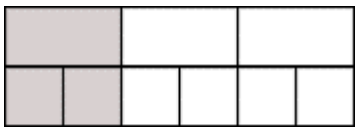
$\frac{4}{8} = \frac{\square}{4}$

11. 

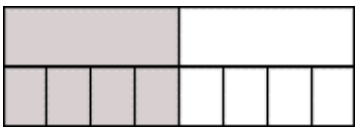
$\frac{\square}{2} = \frac{2}{4}$

12. 

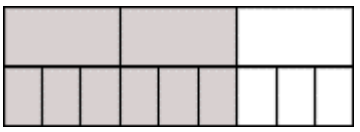
$\frac{1}{3} = \frac{\square}{6}$

13. 

$\frac{\square}{3} = \frac{2}{6}$

14. 

$\frac{1}{2} = \frac{\square}{8}$

15. 

$\frac{2}{3} = \frac{\square}{9}$

Adapted from edhelper.com

Use Cross Multiplication to Compare Fractions

Example….Which fraction is the smallest ?

3/7 or 2/3

(9) (14)

$\frac{3}{7} \times \frac{2}{3}$

3 x 3 =9 and 7 x 2 =14

9 < 14 so 3/7 < 2/3

Use < (less than), > (greater than) or = (equal) to compare the following fractions.

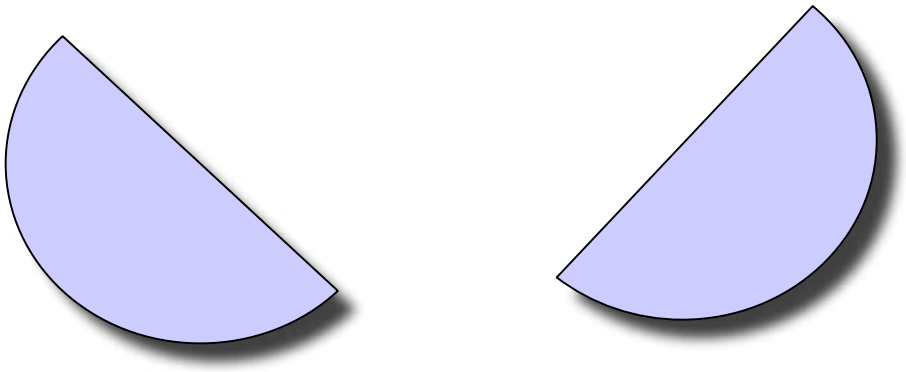
Hint…..the point of the arrow always points to the smallest number.

1. $1 \bigcirc \frac{4}{10}$	2. $\frac{5}{9} \bigcirc \frac{4}{9}$	3. $\frac{1}{7} \bigcirc \frac{1}{3}$
4. $\frac{4}{9} \bigcirc \frac{1}{2}$	5. $\frac{7}{9} \bigcirc \frac{7}{8}$	6. $\frac{3}{6} \bigcirc \frac{5}{6}$
7. $\frac{3}{5} \bigcirc \frac{2}{6}$	8. $1 \bigcirc \frac{4}{4}$	9. $\frac{1}{10} \bigcirc \frac{2}{5}$
10. $1 \bigcirc \frac{1}{5}$	11. $\frac{1}{8} \bigcirc \frac{1}{3}$	12. $\frac{6}{10} \bigcirc \frac{5}{8}$
13. $\frac{1}{4} \bigcirc \frac{1}{10}$	14. $\frac{1}{5} \bigcirc \frac{2}{3}$	15. $\frac{3}{2} \bigcirc 1$
16. $\frac{3}{9} \bigcirc \frac{4}{7}$	17. $\frac{6}{8} \bigcirc \frac{5}{7}$	18. $\frac{2}{5} \bigcirc \frac{2}{7}$

Understanding One-Half

Answer as many of these questions as you can using mental math!
Think of half pizzas to make it easier.

1. $\frac{1}{2} + \frac{1}{2}$
2. $\frac{1}{2} \bullet 2$
3. $\frac{1}{2} + \frac{1}{2} + \frac{1}{2}$
4. $3 - \frac{1}{2}$
5. $3 - 1\frac{1}{2}$
6. $5 \times \frac{1}{2}$
7. $1\frac{1}{2} + 1\frac{1}{2}$
8. $5\frac{1}{2} - 3$
9. $10 \bullet \frac{1}{2}$
10. $10 \div \frac{1}{2}$
11. $4 \bullet \frac{1}{2}$
12. $4 \div \frac{1}{2}$
13. $6 \bullet \frac{1}{2}$
14. $6 \div \frac{1}{2}$



Circle all the fractions that are greater than **½.**

$\frac{3}{4}$ $\frac{1}{4}$ $\frac{5}{9}$ $\frac{2}{6}$ $\frac{3}{6}$ $\frac{5}{6}$ $\frac{3}{7}$ $\frac{4}{7}$

One Half 1/2 , Fifty Percent 50% , Five Tenths .5

Circle the fractions equal to 1/2

1/5 2/9 3/6 6/12 15/30 5/9 2/6 4/8 12/25 8/16 20/40

Circle the fractions less than 1/2

Hint…..find half of each denominator. If the numerator is less than that number, the fraction is less than 1/2.

2/6 2/8 2/3 3/4 3/10 6/10 4/9 5/15 1/3 6/10 4/8 5/9

Circle the fractions greater than 1/2

Hint….find half of each denominator. If the numerator is greater than that number, the fraction is larger than 1/2.

4/7 5/6 3/5 2/3 3/4 5/11 6/14 7/15 1/3 8/14 15/35 6/10

Write 4 fractions less than 1/2.

Write 4 fractions greater than 1/2.

½ = 50% = .5

To find ½ or 50% of a number: divide by 2 or multiply by ½ or .5

1. What is **½ of** 10 ____ 20____ 50____ 150____ 76____ 228_____ 15_____ 45_____

2. What is 50% of $30.00____ $800.00____ $250.00____ $700.00_____ $10.50_____ $25.00_____

3. How many minutes are there in ½ of an hour _____ 1 ½ hours_____ 2 ½ hours_____ 3.5 hours_____

4. How many hours are there in ½ of a day_____ 1.5 days_____ 2 ½ days_____

5. How many months in ½ of a year_____ 3.5 years_____ 2 ½ years_____

6. How many days in ½ of a year_____ 2.5 years_____ 5 ½ years_____

7. How many weeks in ½ of a year_____ 1.5 years_____ 5 ½ years_____

8. How many nickels in ½ of a dollar_____ 1.5 dollars_____

9. How many pounds in ½ ton_____ 1.5 tons_____

10. What is ½ of a million_____

11. How many inches in a foot_____ ½ of a foot_____ 2.5 feet_____ 5 ½ feet_____

12. How many feet in 1 yard_____ 2.5 yards_____ 1 ½ yards_____

DMR

¼ = 25% = .25

To find ¼ or 25% of a number: Divide by 4 or multiply by ¼ or .25

1. What is ¼ of 40_____ 208_____ 100_____ 368_____

2. What is 25% of $100.00_____ $150.00_____ $300._____

3. How many minutes in ¼ of an hour_____ 1.25 hours_____

4. How many hours in 25% of a day_____ 1.25 days_____

5. How many months in 1/4 of a year_____ 1.25 years_____

6. How many weeks in ¼ of a year_____ 2/4_____ ¾_____

7. How many inches in ¼ of a foot_____ 2/4_____ ¾_____

8. How many pounds in 25% of a ton_____ 1.25tons_____

9.How many inches in a yard_____ ¼ of a yard_____ 1.25 yards

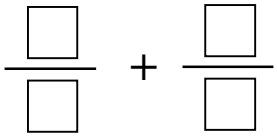
10. What is 25% of $2,000,000.00_____

Dice Digit Fractions

Students gain a wonderful sense of a fraction's size and they get some valuable practice performing basic operations with fractions through playing this game. The directions below are geared towards addition of fractions, but the same game can be played with any of the operations.

You need: 1 die, paper, pencils
Number of players: 2 or 3

1. Players begin by writing a "blank" addition problem on their papers, like this:



2. The first player rolls the die and writes the digit rolled in any of the four boxes.

3. Players take turns, each time rolling a digit to write in one of the four boxes, until all of the boxes are filled. Once a digit is written, it cannot be moved.

4. After all players have filled in all of the boxes, they add the two fractions they've made. The goal is to arrive at the largest sum possible. The player with the largest sum scores a point. After a few rounds, students will begin to see strategies that will help them arrive at the largest sum, such as forming improper fractions.

5. Play a total of ten rounds. The player with the highest score wins.

Variations:

- The goal can be changed so that students try to arrive at the smallest sum possible, or (my favorite) the sum closest to 1.
- Change the operation to ×, –, or ÷
- If you want students to work with numbers other than 1-6, you can use cards numbered 1-12 (or whatever range you like) and students draw cards to generate their fraction digits.
- Have students look at a problem they've generated to see if their was another way they could have placed the digits to get a larger answer.
- Play so that all of the players use the same four digits each time, to see who gets the largest sum using the same numbers in different positions.

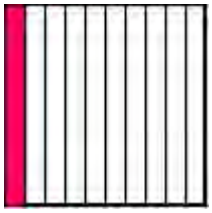
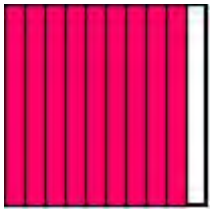
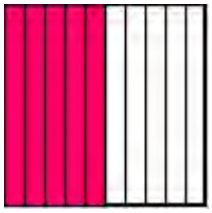
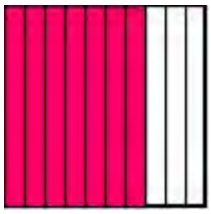
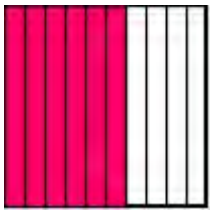
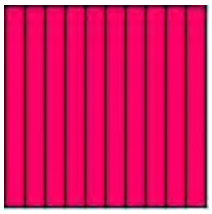
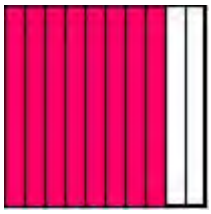
▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼

This activity was found in Ruth Estabrook's Thinking Mathematically Newsletter.

Name _____ Date _____

Writing Decimals

Write each as a decimal and fraction.

1. 	2. 	3. 	4. 
5. 	6. 	7. 	8. 
9. $\frac{7}{10}$	10. **two tenths**	11. $\frac{6}{10}$	12. **six tenths**
13. **seven tenths**	14. **three tenths**	15. $\frac{2}{10}$	16. $\frac{8}{10}$

Name _____ Date _____

Comparing Decimals

Compare. Write <, >, or =.

1.	12.19	_____	12.38	2.	3.35	_____	3.170
3.	2.440	_____	2.440	4.	7.82	_____	7.50
5.	0.587	_____	0.587	6.	6.5649	_____	6.94
7.	8.11	_____	8.099	8.	1.693	_____	1.2107
9.	4.4438	_____	4.4399	10.	10.28	_____	10.280
11.	11.987	_____	12.0	12.	9.82	_____	9.258
13.	5.100	_____	5.2	14.	4.49	_____	4.5
15.	8.140	_____	8.10	16.	10.20	_____	10.20
17.	2.50	_____	2.4926	18.	5.2853	_____	5.82
19.	12.72	_____	12.1	20.	7.70	_____	6.23282

TIP…TO COMPARE DECIMALS

- < means Less Than , > means Greater Than
- The nose of the arrow always points to the smallest number.
- Start by comparing whole numbers and then tenths, hundredths, ect.
- Think of the decimal numbers as money.
- Line up the points, add zeros until they have the same number of spaces, and then compare:

  3.255 __ 3.31 3.255 3.255 is smaller than 3.310 **So…. 3.255 < 3.31**
  3.310

  This method works especially well when comparing more than 2 numbers.

Name _____ Date _____

Rounding Decimals

Round to the nearest tenth.

***Tip*…. Put a dot over the number in the tenths place. This is the number that will stay the same or go up one. Look at the number after the dot to decide. 5 or bigger and the number goes up, smaller than 5 and the number stays the same.**

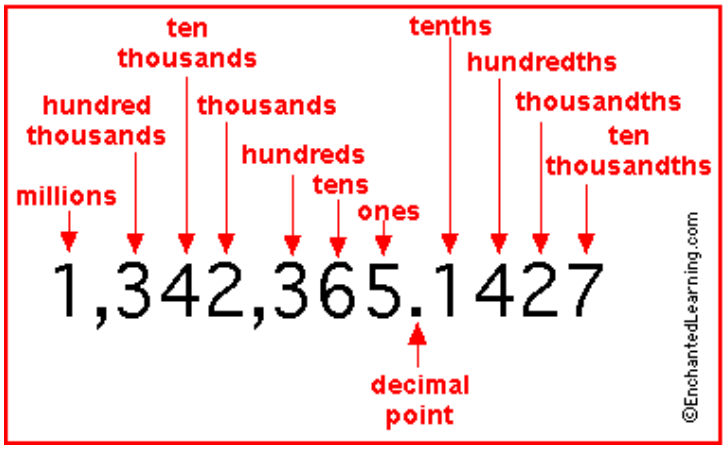
1. 2.52 ***2.5***	2. 61.56	3. 15.381
4. 98.222	5. 74.09	6. 8.723
7. 1.34	8. 211.902	9. .4782

Round to the nearest hundredth.

10. 64.678	11. 63.994	12. 3.092
13. 2.525	14. 45.2509	15. 69.9251
16. 60.777	17. 3.2092	18. 57.3339

Round to the nearest thousandth.

19. 365.6382	20. 92.1109	21. 8.2008
22. 83.9155	23. 9.1194	24. 5.3333
25. 35.9999	26. 95.8979	27. 2.12115



Activities Using Decimal Cards

- Cut the decimals numbers on the line. Have students work independently or in teams to ***order the cards from smallest to largest or largest to smallest.***

- ***Play the game of CONFLICT*** (formerly known as war).

    1. Use two decks of the Decimal Cards.
    2. 2 to 4 players work best.
    3. Deal out all the cards equally among the players.
    4. Each player keeps their cards in a pile, face-down.
    5. At the same time each player turns over their top card.
    6. The player who turns over the card with the highest value wins the round, takes all the cards, and puts them on the bottom of their pile.
    7. If two (or more) players turn over cards of equal value, they have a conflict. To resolve the conflict peacefully, they each take off the first 3 cards from the top of their pile and put them face down. Next, they draw the fourth card off the top of their pile and turn it over, face up. The player with the card of the highest value wins all eight cards.
    8. When time is up, the person with the most cards win. Or the play continues until one person wins all the cards.

- Have students take terms ***"reading"*** the number cards.

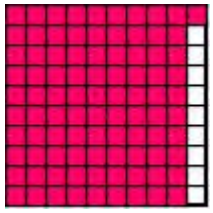
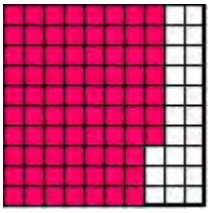
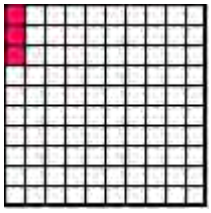
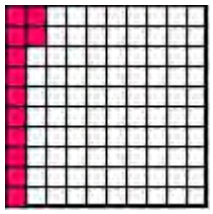
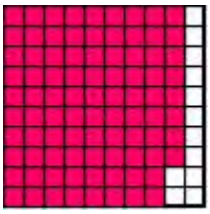
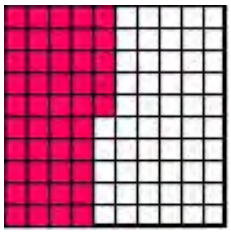
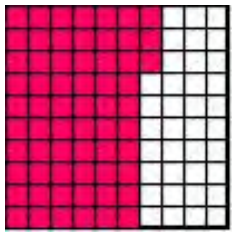
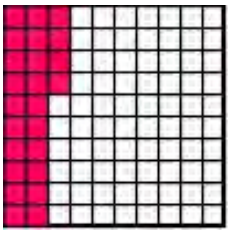
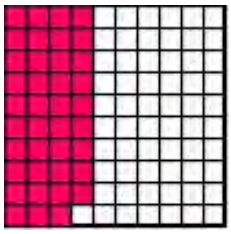
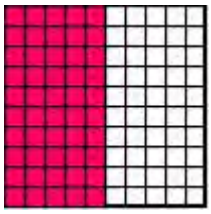
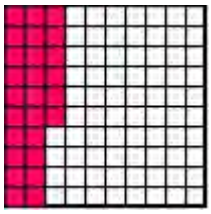
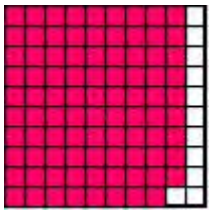
.5	**.45**
.095	**1**
0.6	**.65**

.75	**.705**
1.005	**.8**
2.0	**.25**
.195	**.052**
5.0	**.522**
.33	**.66**

Name _____ Date _____

Percents Plus

Write the percent , fraction and decimal of the shaded portion in each grid.

1. 	2. 	3. 
4. 	5. 	6. 
7. 	8. 	9. 
10. 	11. 	12. 

Adapted from edhelper.com

Name _____ Date _____

Percent to Decimal

To change a percent to a decimal…Divide the percent by 100. A quick way to do this is to *move the decimal point 2 places to the left and lose the percent sign.*

Write each percent as a decimal.

1. 39% ***.39***	2. 60%	3. 4%	4. 55%	5. 8%
6. 5.5%	7. 7.7%	8. 11%	9. 48%	10. 8%
11. 3%	12. 96%	13. 122%	14. 61%	15. 146%
16. 100%	17. 1%	18. 10.5%	19. 99%	20. 80%

Name _____ Date _____

Decimal to Percent

To change a decimal to a percent…Multiply the decimal by 100. A quick way to do this is to *move the decimal point 2 places to the left and add a percent sign.*

Write each decimal as a percent.

1. 0.46 ***46%***	2. 0.88	3. 0.54	4. 0.08	5. 0.17
6. 1	7. 0.02	8. 0.95	9. 0.055	10. 0.155
11. 0.09	12. 0.22	13. 0.71	14. 0.03	15. 2
16. 1.5	17. 0.09	18. 0.13	19. 0.25	20. .06

Name _____ Date _____

Fraction to Percent

To change a fraction to a percent….multiply by 100 or use ratio and proportion. Add the percent sign.

1/4 x 100 = 25 1/4 = 25% or $\frac{1}{4} = \frac{X}{100}$ X = 25 $\frac{1}{4}$ = 25%

Write each fraction as a percent.

1. $\frac{1}{5}$	2. $\frac{1}{2}$	3. $\frac{9}{10}$	4. $\frac{2}{5}$
5. $\frac{5}{8}$	6. $\frac{53}{100}$	7. $\frac{7}{10}$	8. $\frac{4}{8}$
9. $\frac{3}{25}$	10. $\frac{5}{5}$	11. $\frac{1}{3}$	12. $\frac{49}{100}$
13. $\frac{1}{8}$	14. $\frac{3}{10}$	15. $\frac{1}{4}$	16. $\frac{3}{4}$

FINDING THE PERCENT OF A NUMBER

% % % % % % %

To find the percent of a number:

1. Turn the percent to a decimal by moving the decimal point 2 places to the left.

75% = **.**75 7% = **.**07

2. Multiply

Example: Find 30% of 200

30% = **.**3 200 X **.**3 = 60

So….30% of 200 is 60

Be sure to check that you answer makes sense !

Percent of a Number

Estimate the answer to each question.
Find the percent of each number. Round your answer to the nearest tenth.

1. 50% of 84	2. 90% of 82	3. 20% of 80
4. 95% of 200	5. 60% of 200	6. 40% of 200
7. 5% of 98	8. 8% of 25	9. 2% of 80
10. 15% of 75	11. 90% of 76	12. 100% of 66
13. 8% of 20	14. 80% of 20	15. 4% of 80

MAKE SURE YOUR ANSWERS MAKE SENSE.

Name _____ Date _____

Store Discounts and Taxes

DVD Player	$155	Digital Camera	$364
VCR	$118	101-disc CD Changer	$108
13 inch television	$60	50 inch television	$1,056
Laptop Computer	$2,006	Portable CD Player	$135
2-Way Radio	$72	Cordless Phone	$29
Answering Machine	$107	Wireless Phone	$70

Using the price list, calculate each question to the nearest cent.

1. 6% sales tax on one 13 inch television ***What is the sales tax?***	2. 6.5% sales tax on one Answering Machine ***What is the sales tax?***
3. 5% sales tax on one DVD Player ***What is the sales tax?***	4. You want to buy the 101-disc CD Changer and also the Digital Camera. If the sales tax is 6.5%, ***what is your after-tax total?***
5. 30% discount on one VCR ***What is the discount?***	6. 25% discount on one 50 inch television Sales tax is 4% ***How much is the after-tax total?***
7. 50% discount on one Portable CD Player ***What is the discount?***	8. 5% sales tax on one Cordless Phone ***What is the sales tax?***

Be sure that you answered the question that was asked.

Adapted from edhelper.com

Name _____ Date _____

10% of a Number

Tip…*to find 10% of a number, move the point one place to the left.*
(This is the quick way to multiply by .1)

Find 10% of each number. Round to the nearest hundredth.

1. $13.00	2. 93	3. $65.00	4. 21	5. $18.09
6. $18.70	7. 66	8. 55	9. 72	10. 410
11. $25.00	12. $10.63	13. 9.07	14. 35	15. 357
16. 46	17. $88.00	18. $1.90	19. 99	20. 100

1. What is 10% of 200,000 ? _____

2. What is 10% of 250,000 ? _____

3. What is 10% $1,000,000 ? _____

New Hampshire Meals Tax

New Hampshire does not impose any form of general sales tax upon the sale or use of tangible personal property within the state. New Hampshire does, however, levy a tax on meals, room occupancies, and motor vehicle rentals.

In New Hampshire any food or beverage that is prepared and served by a restaurant, whether served for consumption on or off the restaurant premises, is considered to be a meal.

The New Hampshire meals tax rate is 8%. The rooms tax is imposed on any occupancy in a hotel or any similar establishment offering sleeping accommodations in the State of New Hampshire. The tax rate is currently 8% of the rent for each occupancy. A motor vehicle rental tax is imposed under the meals and room tax classification at a rate of 8% on the gross rental receipts of each rental.

1. If you order a pizza for $15.00, what will you pay in taxes ? _____

2. What will the total cost be, pizza and tax ? _____

3. If you order $7.00 worth of food at Wendy's, how much will you pay in tax ? _____

4. What will your total cost be at Wendy's ? _____

5. If you and a friend spend $18.50 for a pizza and drinks, what will the total cost be including taxes ? _____

6. How much will each friend owe for the pizza and drinks if the bill is split evenly ? _____

7. 10 friends go out to eat and the bill is $125.00. They decide to leave a 15% tip. How much will the tip be ? _____
   How much will the tax be ? _____
   What will the total be for meal, tax, and tip ? _____

The Percent Box Method

There are different methods for solving problems involving percents. An easy and dependable method is the Box Method. When you can analyze which number is missing from the problem, then you can set up a proportion in a box and easily find the number you need.

part	**%**
whole	**100**

Step 1	Decide whether you are looking for the part, whole, or percent.
Step 2	Fill in the box with the information you have.
Step 3	Multiply the numbers on the diagonal that has two numbers.
Step 4	Divide the answer (product) in Step 3 by the number on the other diagonal.

An Example

Rose is a new agent with Royal Realty. She sold her first condominium on Saturday. She got a 6% commission on the sale and just received her check for $8,700.00. What was the sale price of the condo?

Step 1	Decide whether you are looking for the part, whole, or percent.
Step 2	Fill in the box with the information you have.
Step 3	Multiply the numbers on the diagonal that has two numbers.
Step 4	Divide the answer (product) in Step 3 by the number on the other diagonal.

1. The numbers you have are 6 and $8,700.00. Six is the percent and 8,700.00 is the part of the sale that Rose received as her commission. You are looking for the whole, the selling price of the condo.

2.

8,700	6
whole	100

3. 8,700 x 100 = 870,000

4. 870,000 ÷ 6 = 145,000

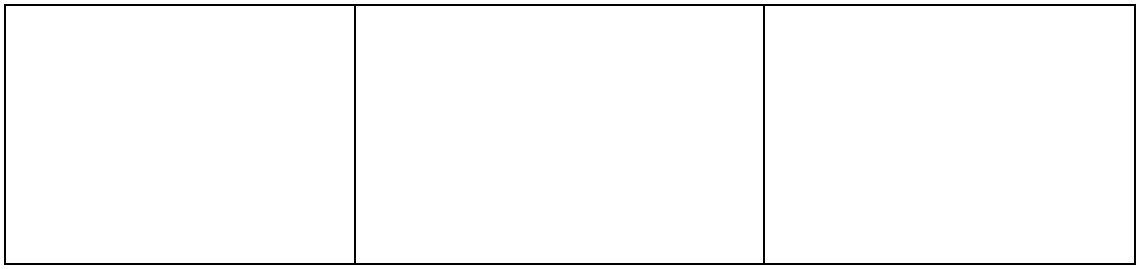
The sale price of the condo was $145,000.00.

Analyze the question to find the missing element and then use the box method to find the answers to the following problems. Use the boxes below for your work space.

Find 15 % of 60.

27 is what % of 45?

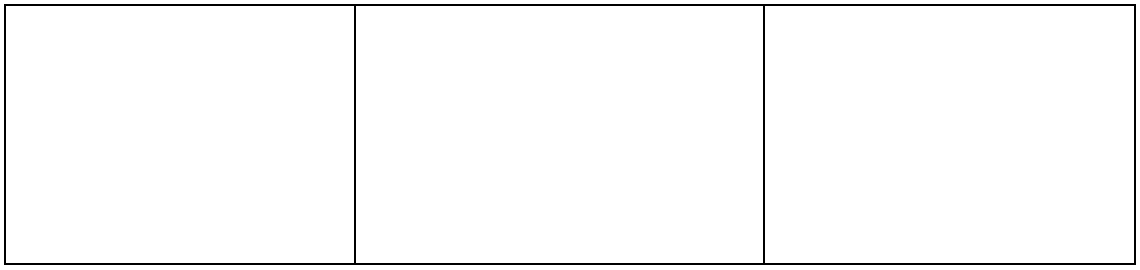
72 is 45% of _____.



30 % of _____ is 21

22 is _____% of 176

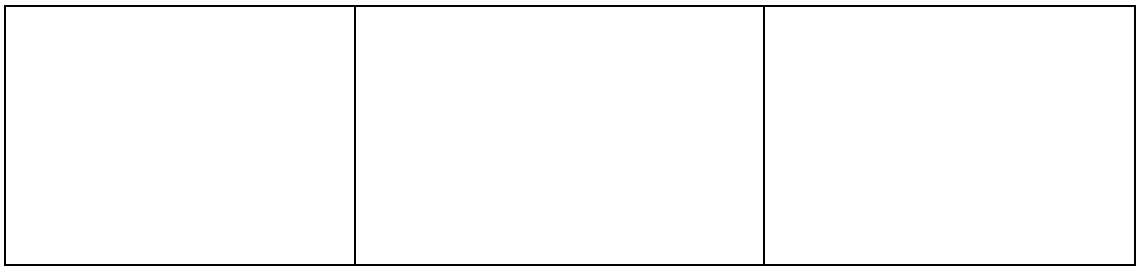
48 of _____% of 64



192 is 60% of _____

35 is _____ % of 56

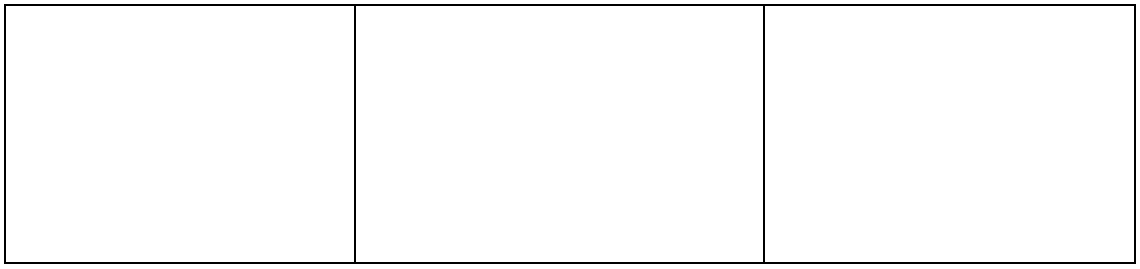
45% of 80 is _____



125% of 64 = _____

21 is _____ % of 140

24 is _____ % of 60



Now solve these problems. Some of them may sound familiar, and they are, but remember, sometimes another step is needed to get to the final answer. Read the question carefully.

1. A dress originally selling for $40.00 was on sale for 15% off. How much did the dress cost if it was purchased on sale? _____

2. Mr. And Mrs. Chao need $8,000 for a down payment on a house. So far they have saved $6,000.
   What percent of the total amount do they still need to save? _____

3. Jamal is in training for football season. A year ago he weighed 178 pounds. He took off some weight hoping to gain speed as a running back. He lost about 5% of his body weight. About how much does Jamal weigh now? _____

4. Alice makes $600 a month at her job at Tasty Taco. She puts $150.00 into savings each month for her college fund. What percent does she save each month? _____

5. Eighteen adult students came to Ms. Towne's algebra class. This was 75% of the students registered for the class. How many people were registered for the class?
   _____

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Name _____ Date _____

Find the Percent of Increase or Decrease

1. Find the amount of change by subtracting.
2. Divide the amount of change by the original amount
3. Change the answer to a percent

Find the percent of increase from 12 to 16.

1. Find the amount of change: 16 – 12 = 4 , 4 is the amount of change
2. Divide the amount of change by the original amount: 4 / 12 = .25
3. .25 = 25% The percent of increase is 25%

You can also use a modified percent box to find the percent of increase or decrease.

Amount of change	**%**
original amount	**100**

Find each percent of change. Round your answer to the nearest tenth of a percent.

1. 5 is increased to 10	2. 200 is increased to 300
3. 100 is decreased to 80	4. 32 is decreased to 22
5. 45 is increased to 200	6. 400 is increased to 1000
7. 290 is decreased to 180	8. 540 is increased to 640
9. 110 is decreased to 75	10. 425 is decreased to 320

DMR

Name _____ Date _____

Ratios

Write each ratio in three ways. Write your answer in simplest form.

1.  squares to total	2.  circles to triangles
3.  square to triangles	4.  squares to triangles
5.  all figures to square	6.  circle to triangles
7.  all figures to circles	8.  triangles to total
9.  triangles to circles	10.  circles to all figures
11.  triangle to squares	12.  circles to triangles
13.  all figures to circles	14.  all figures to square
15.  triangles to all figures	16.  squares to circles
17.  total to triangles	18.  triangles to circles

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Name _____ Date _____

Probability

Find the probability. Write your answer as a fraction in simplest form.

1. A jar contains 19 black, 22 pink, 21 purple, and 11 violet marbles. A marble is drawn at random. P(black).	2. A number from 23 to 35 is drawn at random. P(an even number).
3. A jar contains 17 navy and 20 green marbles. A marble is drawn at random. P(not navy).	4. A number from 10 to 17 is drawn at random. P(a number divisible by 3).
5. A jar contains 19 blue, 21 violet, and 15 orange marbles. A marble is drawn at random. P(orange or blue).	6. You roll a number cube numbered from 1 to 6. P(not a 6).
7. You roll a number cube numbered from 1 to 6. P(2 or 4)	8. You roll a number cube numbered from 1 to 6. P(2).
9. You roll a number cube numbered from 1 to 6. P(5 or 1).	10. You roll a number cube numbered from 1 to 6. P(a number less than 3).
11. A jar contains 20 brown, 23 red, 13 orange, and 4 pink marbles. A marble is drawn at random. P(pink).	12. A jar contains 6 black, 17 blue, 11 yellow, and 20 green marbles. A marble is drawn at random. P(not green).
13. A jar contains 7 orange and 15 white marbles. A marble is drawn at random. P(white).	14. A number from 20 to 29 is drawn at random. P(even number)

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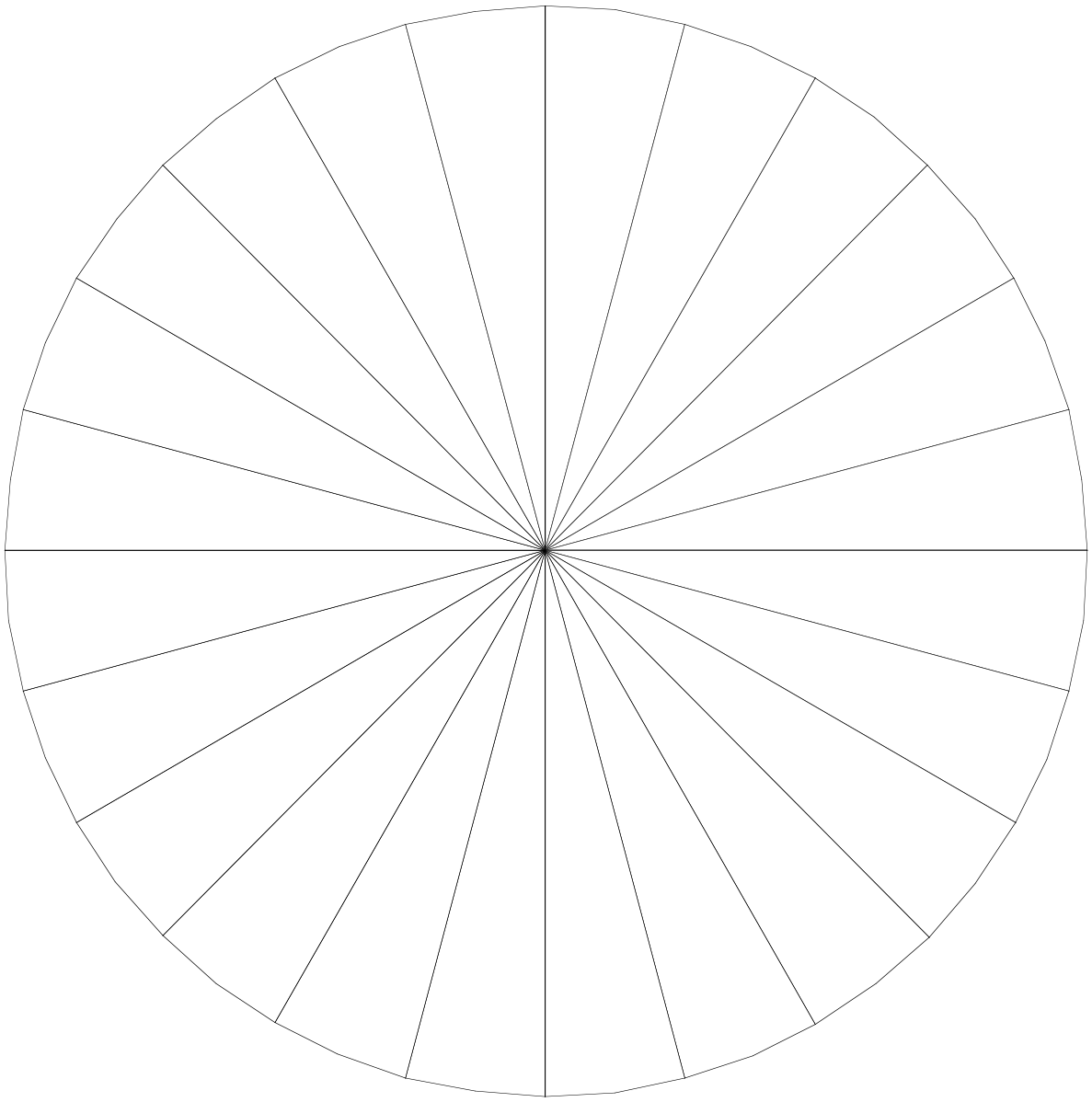
How I Spend My Day



1. Have students brainstorm how they spend the 24 hours in their day. Encourage the use of broad categories such as sleep, school, housework, or work. They should assign a number of hours to each activity.
2. Write each activity as a fraction with a denominator of 24. Reduce the fractions. Write each of the fractions as a decimal and percent.
3. Color in and label the circle to match the data. Each student's wheel will be different.

DECIMAL, PERCENT & FRACTION CARDS

.5	50%	$\frac{1}{2}$
.25	25%	$\frac{1}{4}$
.75	75%	$\frac{3}{4}$
.1	10%	$\frac{1}{10}$

.2	20%	$\frac{2}{10}$
.333	$33\frac{1}{3}\%$	$\frac{1}{3}$
.666	$66\frac{2}{3}\%$	$\frac{2}{3}$
1	100%	$\frac{1}{1}$

ACTIVITIES USING THE DECIMAL, PERCENT & FRACTION CARDS

Copy the cards onto bright and heavyweight paper and cut along the lines.

- Have students work in teams or independently to ***match the cards with equal values***.

- Give students the decimal cards only and have them ***order the cards*** from smallest to largest or largest to smallest. Do the same with the fraction cards. Students can work in teams or independently.

- Have students ***draw the fractions*** on blank cards to add to the collection.

- ***Play the game of CONFLICT*** (formerly known as war).

    1. Use one or two decks of the Fraction, Decimal & Percent Cards.
    2. 2 to 4 players work best.
    3. Deal out all the cards equally among the players.
    4. Each player keeps their cards in a pile, face-down.
    5. At the same time each player turns over their top card.
    6. The player who turns over the card with the highest value wins the round, takes all the cards, and puts them on the bottom of their pile.
    7. If two (or more) players turn over cards of equal value, they have a conflict. To resolve the conflict peacefully, they each take off the first 3 cards from the top of their pile and put them face down. Next, they draw the fourth card off the top of their pile and turn it over, face up. The player with the card of the highest value wins all eight cards.
    8. When time is up, the person with the most cards win. Or the play continues until one person wins all the cards.

- ***For a quick review***, deal out all the cards (1 or 2 decks depending on the number of students participating) but keep either the fractions, decimals or percents. Turn over the teacher card and have students discard all equal values from their cards. The player who gets rid of their pile first wins.

MEAN, MODE, AND MEDIAN

The ***mean*** of a group of numbers is the **average.** To find the mean, add all the numbers and divide by how many numbers there are.

The ***mode*** in a group of numbers is the number that occurs most often.

The ***median*** is the middle number. You must order the numbers. If there is no middle number, find the average of the middle two numbers.

Example: Data: 5, 5, 8, 9, 12, 15

mean = 5+5+8+9+12+15=54 54/6=9 9 is the ***mean*** or ***average.***
mode = 5
median = 8.5 Because there is no middle number, you average the middle two numbers (8 + 9) / 2 = 8.5

Collect data from your classmates and find the mean, median and mode of each set of numbers.

1. ***How many miles away do you live from school ?***
   Data:

   Mean_____ Median_____Mode_____

2. ***How many children do you have ?***
   Data:

   Mean_____Median _____Mode_____

3. ***What is the average age of students in your class ?***
   Data:

   Mean_____Median _____Mode_____

4. ***Write a question of your own and collect data.***
   Find the mean, median and mode.

Heat Index Chart

The heat index (sometimes called the apparent temperature) is a measure of the contribution that high temperature and high humidity (expressed either as relative humidity (RH) or dew point temperature) make in reducing the body's ability to cool itself. The table below may be used to estimate the heat index. **The heat index (HI) is an accurate measure of how hot it really feels when the affects of humidity are added to high temperature.**

Heat Index Chart (Temperature & Relative Humidity)

RH (%)	Temperature (° F)															
	90	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**	**101**	**102**	**103**	**104**	**105**
90	119	123	128	132	137	141	146	152	157	163	168	174	180	186	193	199
85	115	119	123	127	132	136	141	145	150	155	161	166	172	178	184	190
80	112	115	119	123	127	131	135	140	144	149	154	159	164	169	175	180
75	109	112	115	119	122	126	130	134	138	143	147	152	156	161	166	171
70	106	109	112	115	118	122	125	129	133	137	141	145	149	154	158	163
65	103	106	108	111	114	117	121	124	127	131	135	139	143	147	151	155
60	100	103	105	108	111	114	116	120	123	126	129	133	136	140	144	148
55	98	100	103	105	107	110	113	115	118	121	124	127	131	134	137	141
50	96	98	100	102	104	107	109	112	114	117	119	122	125	128	131	135
45	94	96	98	100	102	104	106	108	110	113	115	118	120	123	126	129
40	92	94	96	97	99	101	103	105	107	109	111	113	116	118	121	123
35	91	92	94	95	97	98	100	102	104	106	107	109	112	114	116	118
30	89	90	92	93	95	96	98	99	101	102	104	106	108	110	112	114

Note: Exposure to full sunshine can increase HI values by up to 15° F

Apparent temperature heat stress index

Category	Apparent temperature	Dangers
Caution	80-90°F	Exercise more fatiguing than usual
Extreme caution	90-105°F	Heat cramps, exhaustion possible
Danger	105-130°F	Heat exhaustion likely
Extreme danger	Greater than 130°F	Heat stroke imminent

USING A HEAT INDEX CHART

Use the Heat Index Chart to answer the following questions.

1. If the temperature outside is 90 degrees and the relative humidity is at 60%, how hot does it actually feel (apparent temperature) ? _____

2. If the temperature outside is 92 degrees and the relative humidity is at 50%, how hot will it feel ? _____

3. If the temperature outside is 94 degrees and the relative humidity is at 60%, how hot will it feel ? _____

4. If the temperature is 95 degrees and the relative humidity is at 70%, how hot will it feel ? _____

5. If the temperature is at 97 degrees and the relative humidity is at 55%, how hot will it feel ? _____

---

6. If the heat index (apparent temperature) is 115 and the relative humidity is at 55%, what is the actual temperature (F) ? _____

7. If the relative humidity is at 50% and the heat index is 125 degrees, What is the actual temperature (F) ? _____

8. If the relative humidity is at 75% and the heat index temperature is 112 degrees, what is the actual temperature (F) ? _____

9. If the relative humidity is at 80% and the heat index temperature is 131, what is the actual temperature (F) ? _____

DMR

WIND CHILL CHART

Use the National Weather Service Wind Chill Chart to answer the following questions.

1. If the temperature outside is 20 degrees and the wind is blowing at 10 miles per hour, what is the wind chill temperature ? _____

2. Temperature is 20 degrees, wind is 20 mph, wind chill temp. is _____

3. Temperature is 10 degrees, wind is 15 mph, wind chill temp. is _____

4. Temperature is 0 degrees, wind is 10 mph, wind chill temp. is _____

5. Temperature is 0 degrees, wind is 20 mph, wind chill temp. is _____

6. Temperature is –5 degrees, wind is 5 mph, wind chill temp. is _____

7. Temperature is –5 degrees, wind is 30 mph, wind chill temp. is _____

8. Temperature is 15 degrees, wind is 50 mph, wind chill temp. is _____

9. Temperature is 5 degrees, wind is 25 mph, wind chill temp. is _____

10. Temperature is –10 degrees, wind is 10 mph, wind chill temp. is _____

11. If the temperature is 30 degrees and the wind chill factor is 15 degrees, how many miles per hour must the wind be blowing ? _____

12. Temperature is 30 degrees, wind chill factor is 10 degrees, mph wind __

13. Temperature is 20 degrees, wind chill factor is 0 degrees, mph wind ___

14. Temperature is 10 degrees, wind chill factor is –15 degrees, mph wind__

15. Temperature is 0 degrees, wind chill factor is –16 degrees, mph wind___

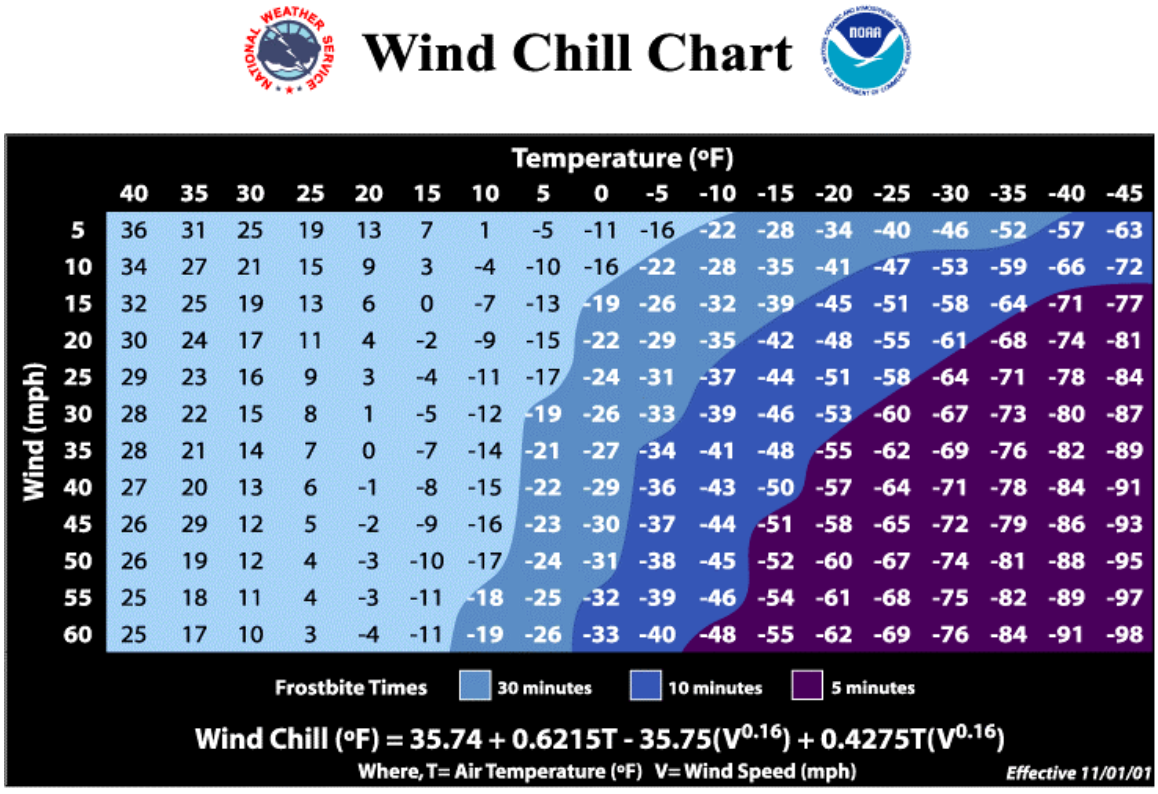
16. If the wind is blowing at 15 miles per hour and the wind chill factor is -7 degrees, what must the temperature be ? _____

17. Wind is 15 mph, wind chill factor is –2 degrees, temperature _____

18. Wind is 20 mph, wind chill factor is –2 degrees, temperature _____

19. Wind is 10 mph, wind chill factor is –10 degrees, temperature _____

20. Wind is 25 mph, wind chill factor is –17 degrees, temperature _____



Name _____ Date _____

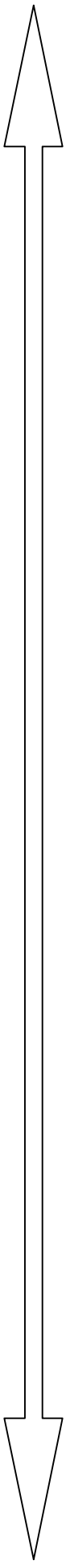
Integers

Write an integer to represent each description.

1. 5 units to the left of 11 on a number line.	2. An altitude of 8900 feet.
3. The stock market went down 291 points today.	4. A loss of $37,535 on an investment.
5. 20° below zero.	6. Deposit $1,546 into a bank account.
7. The opposite of 271.	8. 8 units to the left of -5 on a number line.
9. The football player had a 15 yard loss on the play.	10. A pay cut of $3,500.
11. Withdraw $1,794 from an ATM machine.	12. A gain of twelve pounds.
13. 78° above zero.	14. 15 units to the right of 4 on a number line.
15. The stock market went up 243 points today.	16. A raise of $8,000.
17. The football player had a 16 yard gain on the play.	18. 15 units to the right on a number line.
19. 8 units to the left on a number line.	20. One hundred twenty-one feet below sea level.

Adapted from edhelper.com

Make your own number line. Start with 0 in the middle.
Number from +20 to -20



USING A NUMBER LINE

Use a number line or thermometer to answer the following questions.

1. Which temperature is colder, -10^{o} or -5^{o} ? _____

2. Which number is smaller, -10 or –5 ? _____

3. Which temperature is warmer, -5^{o} or -1^{o} ? _____

4. Which number is larger, -5 or –1 ? _____

5. Put the following numbers in order from **smallest to largest**.

   5, -8, -3, 0, 2, -1, 1 _____

6. Put the following numbers in order from **largest to smallest**.

   10, -25, 1, 0, -50, 15, -2, -9 _____
   _____

7. The temperature was -2^{o} at dawn and 12^{o} at noon. How many degrees did the temperature rise ? _____

8. The temperature was -5^{o} at dawn and 23^{o} at 4:00pm. How many degrees did the temperature rise ? _____

9. The temperature was 20^{o} at noon and -12^{o} by midnight. How many degrees did the temperature fall ? _____

10. The temperature was -2^{o} at dawn and -7^{o} at noon. How many degrees did the temperature fall ? _____

Name _____ Date _____

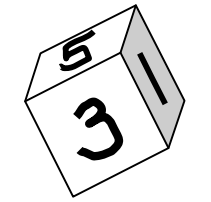
Ordering Integers

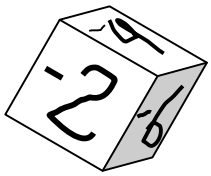
Put the integers in order from least to greatest.

1. 5, -10, -3, 9, -6, -4, 2, 7, -7
2. 6, 4, -11, 17, 18, -14, 7, 21
3. -40, 44, -51, 24, 5, -48, -50, 49
4. -5, 21, -61, 42, -66, 5, 39, -31
5. 51, -17, 22, -36, -35
6. 44, -44, 68, -48, 66, 56, -29, -42
7. 42, -21, 48, 72, -64, -20
8. -30 , -14, -3, 9, 31, 4, -31, 44, 14
9. -41, 54, -31, -79, 57
10. 17, -82, -62, -86, 71, 62, -36, 58

RACE TO 10

Race to 10 is a game to help students internalize the rules for adding positive and negative numbers. To play this game, make an enlarged version of the game board below for each pair of students.





10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10

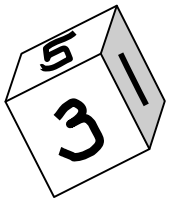
Also, you need to make two number cubes for each pair of students. The most inexpensive way to make these is to use wooded cubes, available at craft stores. Write 1, 2, 3, 4, 5, and 6 on one die and -1, -2, -3, -4, -5, and -6 on the other die.

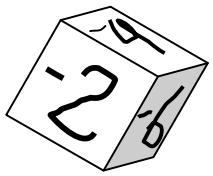
Each student places a marker of some kind (I usually use two different colored paper clips) at zero. Students take turns rolling the two dice and adding the results. The answer tells them how many spaces to move up (positive result) or down (negative result).

For example, if Player A rolls a –3 and a 5, the sum is 2, so the player moves two spaces up. On her following turn, if player A rolls a 1 and a –6, the sum is –5, so the player moves down 5 spaces, ending up at –3.

Players take turns. The first player to get off the board either in the positive direction or the negative direction wins

*****This is one of my favorite games developed by Ruth Estabrook. You can find other excellent learning games in **Active Mathematics**, available free from the NH Bureau of Adult Education Mini-grant program.*





10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10

Name _____

Solving Addition Equations

Try to solve as many of the following equations in your head as you can.
X + 25 = 100 What number plus 25 equals 100 ? 75 + 25 = 100 so X = 75

To solve the equations you can also use the opposite operation on both sides, this balances the equation and gives you the answer.
X + 25 = 100 X + 25 – 25 = 100 – 25 100 – 25 = 75 so X = 75

Always fit your answer back in to check. 75 + 25 = 100 so 75 is the correct answer.

Solve each equation.

1. m + 60 = 110	2. c + 30 = 130	3. 81 = 11 + b
4. x + 27 = 48	5. n + 15 = 100	6. n + 22 = 75
7. g + 44 = 97	8. N + 33 = 233	9. t + 67 = 160
10. 110 = x + 35	11. 78 = x + 2	12. h + 59 = 110
13. 87 = w + 54	14. 58 = f + 32	15. 35 + q = 98
16. n + 100 = 198	17. z + 96 = 154	18. n + 4 = 49
19. 112 = x + 50	20. 28 = 22 + x	21. r + 21 = 32

Check your answers.

Name _____

Solving Subtraction Equations

Try to solve as many of the following equations in your head as you can.
X - 25 = 15 What number take away 25 equals 15 ? 40 - 25 = 15 so X = 40

To solve the equations you can also use the opposite operation on both sides, this balances the equation and gives you the answer.
X - 25 = 15 X - 25 + 25 = 15 + 25 15 + 25 = 40 so X = 40

Always fit your answer back in to check. 40 - 25 = 15 so 15 is the correct answer.

Solve each equation.

1. m - 10 = 60	2. c - 30 = 20	3. x - 25 = 75
4. x - 27 = 17	5. n - 15 = 65	6. n - 22 = 11
7. g - 4 = 42	8. N - 33 = 22	9. t - 27 = 12
10. 100 = x - 25	11. 18 = x - 20	12. h - 50 = 110
13. 8 = w - 40	14. 8 = f - 32	15. 35 - q = 5
16. n - 15 = 15	17. z - 28 = 160	18. n - 4 = 500
19. 112 = x - 50	20. 28 = 22 - x	21. r - 21 = 32

Check your answers.

Solving Multiplication Equations

Try to solve as many of the following equations in your head as you can.
n x 5 = 30 What number times 5 equals 30 ? 6 x 5 = 25 so n = 6

To solve the equations you can also use the opposite (inverse) operation on both sides, this balances the equation and gives you the answer.
n x 5 = 30 n x 5 ÷5 = 30 ÷ 5 30 ÷ 5 = 6 so n = 6

Always fit your answer back in to check. 6 x 5 = 30 so 6 is the correct answer.

Solve each equation.

1. 5 x n = 20	2. 8 x m = 56	3. 3 x n = 15
4. 9c = 54	5. 9n = 36	6. 6k = 24
7. 32 = 4t	8. 25 x b = 100	9. 18 = 9j
10. 3d = 12	11. (5)n = 45	12. (7)n = 42
13. 6 x n =72	14. 7n = 56	15. 3h = 21
16. 66 = 2a	17. 5n = 150	18. 3u = 96
19. 4x = 88	20. 81 = 9s	21. 86 = 2w
22. 3 x v = 96	23. (4)n = 168	24. 5 x n = 100

Check your answers !

Solving Division Equations

Try to solve as many of the following equations in your head as you can.
n ÷ 2 = 6 What number divided by 2 equals 6 ? 12 ÷ 2 = 6 so n = 12

To solve the equations you can also use the opposite (inverse) operation on both sides, this balances the equation and gives you the answer.
n ÷ 2 = 6 n ÷ 2 x 2 = 6 x 2 so n = 12

Always fit your answer back in to check. 12 ÷ 2 = 6 so 12 is the correct answer.

Solve each equation.

1. n ÷ 5 = 4	2. x ÷ 3 = 7	3. n / 3 = 4
4. 9 ÷ c = 3	5. n / 9 = 7	6. k / 4 = 11
7. 3 = n ÷ 4	8. 45 / x = 9	9. 18 / n = 9
10. x ÷ *6* = 6	11. n / 8 = 4	12. n ÷ **7** = 7
13. 6 ÷ n = 3	14. n / 3 = 6	15. n ÷ 3 = 7
16. 66 = x ÷ 2	17. n ÷ *5* = 15	18. u / 3 = 13
19. x ÷ **2** = 44	20. 8 = 9 / s	21. 8 ÷ ***n*** = 2
22. x ÷ 3 = 24	23. n / 2 = 168	24. n ÷ ***5*** = 100

Check your answers !

Name _____ Date _____

Solving Equations

Write an equation for each problem. Then solve the equation.

1. 132 divided by a number is 11.	2. 23 plus a number is 65.
3. A number minus 61 is 28.	4. A number divided by 4 is 3.
5. The difference between 52 and a number is 3.	6. Nine times a number is 54.
7. A number multiplied by 3 is 21.	8. A number plus 76 is 172.
9. 70 divided by a number is 10.	10. A number minus 33 is 46.
11. Six times a number is 12.	12. A number multiplied by 10 is 80.
13. A number plus 40 is 96.	14. 69 plus a number is 152.
15. A number divided by 11 is 4.	16. The difference between 85 and a number is 82.
17. 25 divided by a number is 5.	18. Twelve times a number is 96.

Adapted from edhelper.com

Name _____ Date _____

Evaluate Expressions

Complete by evaluating each expression. ***Be sure to follow the order of operations***.

1. $7m - 3$ for $m = 3$	2. $2n$ for $n = 5$	3. $4r - 4$ for $r = 2$
4. $3x$ for $x = 8$	5. $8d + 21$ for $d = 6$	6. $9w + 27$ for $w = 4$
7. $q \div 4$ for $q = 8$	8. $6t$ for $t = 3$	9. $5h$ for $h = 6$
10. $7k - 52$ for $k = 9$	11. $5a + 42$ for $a = 7$	12. $2u + 17$ for $u = 5$
13. $3b - 2$ for $b = 8$	14. $4c - 10$ for $c = 4$	15. $9y + 41$ for $y = 5$
16. $8v$ for $v = 6$	17. $6s$ for $s = 8$	18. $\frac{p}{9} - 2$ for $p = 27$
19. $3e - 23$ for $e = 9$	20. $6f + 6$ for $f = 2$	21. $s \div 2$ for $s = 12$
22. $4z + 43$ for $z = 6$	23. $2g - 3$ for $g = 4$	24. $7h$ for $h = 2$

Adapted from EdHelper.com

USING FORMULAS

FAHRENHEIT TO CELSIUS TEMPERATURE CONVERSION

Celsius
A temperature scale in which zero degrees is the freezing point of water and 100 degrees is the boiling point. Temperature in this scale is generally denoted by °C .
Fahrenheit
A temperature scale, used primarily in the United States, in which the freezing point of water is 32 degrees and the boiling point 212 degrees. Temperatures in this scale are denoted by °F.

You do the math……

Fahrenheit to Celsius: (F – 32) ÷ 9 x 5 = C

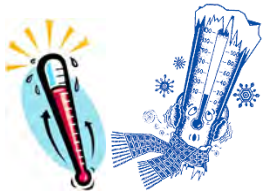
- First subtract 32 from the Fahrenheit number
- Divide the answer by 9
- Then multiply that answer by 5

1. Change 95 degrees Fahrenheit to Celsius _____
2. Change 32 degrees Fahrenheit to Celsius _____
3. Change 104 degrees Fahrenheit to Celsius _____
4. Change 86 degrees Fahrenheit to Celsius _____
5. Change 212 degrees Fahrenheit to Celsius _____

This formula also works to convert Fahrenheit to Celsius: **(F – 32) ÷ 1.8 =C**

Use this formula and a calculator to convert the following. Round answers to the nearest tenth.

1. Change 50 degrees Fahrenheit to Celsius _____
2. Change 98 degrees Fahrenheit to Celsius _____
3. Change 100 degrees Fahrenheit to Celsius _____
4. Change 1000 degrees Fahrenheit to Celsius _____
5. Change 150 degrees Fahrenheit to Celsius _____



CELSIUS TO FAHRENHEIT CONVERSION

Celsius
A temperature scale in which zero degrees is the freezing point of water and 100 degrees is the boiling point. Temperature in this scale is generally denoted by °C.

Fahrenheit
A temperature scale, used primarily in the United States, in which the freezing point of water is 32 degrees and the boiling point 212 degrees. Temperatures in this scale are denoted by °F.

You do the math……

Celsius to Fahrenheit : (C x 9) ÷ 5 + 32 = F

1. Convert 100 degrees Celsius to Fahrenheit _____
2. Change 50 degrees Celsius to Fahrenheit _____
3. Change 30 degrees Celsius to Fahrenheit _____
4. Convert 10 degrees Celsius to Fahrenheit _____
5. Change 0 degrees Celsius to Fahrenheit _____

This formula also works when converting Celsius to Fahrenheit:

$$F = C \times 1.8 + 32$$

Use this formula and a calculator to convert the following. Round your answers to the nearest tenth.

1. Convert 75 degrees Celsius to Fahrenheit _____
2. Change 28 degrees Celsius to Fahrenheit _____
3. Change 36 degrees Celsius to Fahrenheit. _____
4. Convert 2 degrees Celsius to Fahrenheit. _____
5. Change 200 degrees Celsius to Fahrenheit. _____

BMI -- Body Mass Index: BMI for Adults

Body **M**ass **I**ndex or BMI is a tool for indicating weight status in adults. It is a measure of weight for height. For adults over 20 years old, BMI falls into one of these categories:

BMI	Weight Status
Below 18.5	Underweight
18.5 – 24.9	Normal
25.0 – 29.9	Overweight
30.0 and Above	Obese

$$\text{Body Mass Index} = \frac{\text{weight in pounds}}{\text{Height in inches}^2} \times 703$$

BMI = (weight in pounds divided by height in inches squared) times 703

Find the body mass and weight status of the following people.

1. 5 feet 5 inches tall and 144 pounds _____
2. 5'8" tall and 184 pounds _____
3. 5 ft. and 5 in. tall and 180 lbs. _____
4. 5'4" tall and 105 pounds _____
5. Find your own BMI _____

Check your answers using the Body Mass Index Table on the next page.

Body Mass Index Table

To use the table, find the appropriate height in the left-hand column labeled Height. Move across to a given weight (in pounds). The number at the top of the column is the BMI at that height and weight. Pounds have been rounded off.

BMI	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**
Height (inches)	**Body Weight (pounds)**																
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197
64	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204
65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223
68	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230
69	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236
70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265
74	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279
76	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287

ALGEBRA MATHO

9	**5**	**6**	10
-8	**4**	**7**	**3**
-24	**42**	**16**	**-5**
21	**-9**	**8**	**20**

Write the number of the question in the circle whose value equals the number in the box.

Turn the worksheet into a game by being the first person to get 4 in a row, column or diagonal or be the first person or team to match all the questions and answers.

ALGEBRA MATHO

1. $2x = 18$
2. $20 – x = 14$
3. $21/x = 7$
4. $5 + x = 26$
5. $– 15 + 6 = x$
6. $–2x = 16$
7. $–15/3 = x$
8. $4x + 1 = 17$
9. $x/2 = 4$
10. $5x – 2 =23$
11. $6 + 2(5) = x$
12. $25/5 + x =47$
13. $16 – 2x = -4$
14. $–8(3) = x$
15. $52 – 6(x) = 10$
16. $x + 32/4 = 28$

Scientific Notation

SCIENTIFIC NOTATION is a way of writing very large numbers or very small decimals. The numbers are expressed as a product of a number between 1 and 10 and a power of 10.

1. **Example:** Write 12,300,000 in scientific notation.
   Move the decimal point to the left until it lands between the 1 and 2.
   Answer: 1.23×10^{7} because the decimal point moved left 7 places.

   PRACTICE: Write each number in scientific notation:
   1) 456,000 2) 25,000,000 3) ten million

   4) 200,000 human cells could fit on the head of a pin. Write this number in scientific notation.

2. **Example:** Write .00012345 in scientific notation.
   Move the decimal point to the right until it lands between 1 and 2.
   Answer: 1.2345×10^{-4} because the decimal point moved right four places.

   PRACTICE: Write each number in scientific notation:
   5) .00005 6) .000012 7) .0000123

   8) Human hair grows .0000000108 miles per hour. Write this number in scientific notation.

3. **Example:** Write 7.2×10^{5} in standard notation
   Answer: 720,000 because the decimal point moved right five places.

   PRACTICE: Write each number in standard notation:
   9) 4.7×10^{6} 10) 7.123×10^{3}

   11) A super computer can perform 2.5×10^{9} operations per second. Write this number in standard notation.

4. **Example:** Write 9×10^{-5} in standard notation.
   Answer: .00009 because the decimal point moved to the left 5 places.

   PRACTICE: Write each number in standard notation:
   12) 5.17×10^{-4} 13) 1.9×10^{-6}

   14) The diameter of a flu virus is approximately 6.047×10^{-5}. Write in standard notation.

Adapted from floridatechnet.org

Name _____ Date _____

Scientific Notation

In the first part, write the number in scientific notation.
In the second part, write the scientific notation number in standard form.

1. 718,900	2. 0.0035
3. 900,000	4. 0.009
5. 12,000	6. 83,470
7. 0.0025	8. 990,000
9. 2,900,000	10. .00025
11. 0.05	12. 0.2400

13. 4.4×10^{5}	14. 3.65×10^{4}
15. 8.5×10^{3}	16. 1.5×10^{-2}
17. 4.4×10^{5}	18. 6×10^{-2}
19. 9.2×10^{5}	20. 2.9×10^{5}
21. 6.98×10^{3}	22. 3×10^{-3}
23. 2.2×10^{-1}	24. 3.7×10^{3}

Angles Vocabulary

Cut and paste onto index cards or copy on heavyweight paper to create class activities or study cards. Have students draw the angles on the cards.

RIGHT ANGLE	An angle that measures exactly 90 degrees
STRAIGHT ANGLE	An angle that measures exactly 180 degrees
ACUTE ANGLE	An angle that measures less than 90 degrees
OBTUSE ANGLE	An angle that measures between 90 and 180 degrees
COMPLIMENTARY ANGLES	Two angles that have a combined measure of 90 degrees
SUPPLEMENTARY ANGLES	Two angles that have a combined measure of 180 degrees

Triangle Vocabulary

Cut and paste onto index cards or copy onto heavyweight paper to create class activities or study cards. Have students draw the angles on the cards.

SCALENE TRIANGLE	A triangle in which no angles and no sides are equal
ISOSCELES TRIANGLE	A triangle in which two angles are equal and two sides are equal
EQUILATERAL TRIANGLE	A triangle in which all sides and all angles are equal
RIGHT TRIANGLE	A triangle in which one angle is 90 degrees
ACUTE TRIANGLE	A triangle in which all angles are less than 90 degrees
OBTUSE TRIANGLE	A triangle in which one angle is greater than 90 degrees

Geometry Words

Write the word and draw a picture for each definition. There is a word bank on the following paper.

1. An angle that equals less than 90°

2. An angle that equals between 90° and 180°

3. An angle that equals 90°

4. Lines that never intersect

5. 2 lines that intersect creating 90° angles (right angles)

6. 2 angles that have a combined measure of 90°

7. Angles that have a combined measure of 180°

8. An angle that equals 180°

9. A triangle in which one angle measures 90°

10. A triangle with 3 equal sides and 3 equal angles

11. A triangle with 3 equal sides and 2 equal angles

12. A triangle with no equal sides and no equal angles

Geometry Vocabulary Word Bank

acute angle

obtuse angle

straight angle

right angle

parallel lines

perpendicular lines

supplementary angles

complementary angles

right triangle

equilateral triangle

isosceles triangle

scalene triangle

GED TEST FORMULAS

AREA of a:

square	Area = $side^2$
rectangle	Area = length × width
parallelogram	Area = base × height
triangle	Area = $^1/_2$ × base × height
trapezoid	Area = $^1/_2$ × ($base_1$ + $base_2$) × height
circle	Area = π × $radius^2$; π is approximately equal to 3.14.

PERIMETER of a:

square	Perimeter = 4 × side
rectangle	Perimeter = 2 × length + 2 × width
triangle	Perimeter = $side_1$ + $side_2$ + $side_3$
CIRCUMFERENCE of a circle	Circumference = π × diameter; π is approximately equal to 3.14.

VOLUME of a:

cube	Volume = $edge^3$
rectangular solid	Volume = length × width × height
square pyramid	Volume = $^1/_3$ × $(base\ edge)^2$ × height
cylinder	Volume = π × $radius^2$ × height; π is approximately equal to 3.14.
Cone	Volume = $^1/_3$ × π × $radius^2$ × height; π is approximately equal to 3.14.

COORDINATE GEOMETRY

distance between points = $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$; (x_1, y_1) and (x_2, y_2) are two points in a plane.

slope of a line = $\frac{y_2 - y_1}{x_2 - x_1}$; (x_1, y_1) and (x_2, y_2) are two points on the line.

PYTHAGOREAN RELATIONSHIP

$a^2 + b^2 = c^2$; *a* and *b* are legs and *c* the hypotenuse of a right triangle.

MEASURES OF CENTRAL TENDENCY

mean = $\frac{x_1 + x_2 + \ldots + x_n}{n}$, where the *x*'s are the values for which a mean is desired, and *n* is the total number of values for *x*.

median = the middle value of an odd number of *ordered* scores, and halfway between the two middle values of an even number of *ordered* scores.

SIMPLE INTEREST interest = principal × rate × time

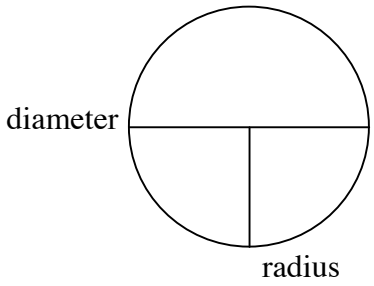
DISTANCE distance = rate × time

TOTAL COST total cost = (number of units) × (price per unit)

Circle Formulas

There are special formulas to find the perimeter and area of a circle. The perimeter (distance around) a circle is called the **circumference**. The formulas for circumference and area of a circle use a constant, pi (π). Pi is approximately equal to 3.14 or 22/7. It is important to know definitions for some terms to use the formulas for circumference and area of a circle. These terms are:

Term	Definition
circumference C	the distance around the outside of a circle
pi (π) π	a numerical constant approximately equal to 3.14
radius R	the distance from the center of a circle to any point on the outside
diameter D	the distance from one side of the circle to another passing through the center



Because they have an end point at the center of a circle, all radii are equal to one half of the diameter. So if you know one, it is easy to find the other. In some problems, you will be given the radius when it is really the diameter you need to use with the formula. In others, you will be given the diameter when it is really the radius you need to use with the formula. Check the words carefully and make an adjustment if you need to do so.

Here is some practice:

R = 4 D =	R = 12 D =	R = 1 D =	R = 17 D =	R = 7 D =	R = 2 1/2 D =
R = D = 10	R = D = 15	R = D = 28	R = D = 100	R = D = 4.6	R = D = 3 1/2
R = 9 D =	R = D = 30	R = 11 D =	R = D = 500	R = D = n	R = D = 7

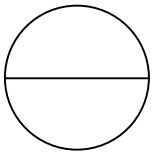
Circumference of a Circle

The formula for finding the circumference (perimeter) of a **circle** is **C = πD**. Although pi has an infinite number of places beyond the decimal point (3.1416…), it is customary to use 3.14 or 22/7 for pi when solving formula problems.

Example:

C = πD
C = 3.14 x 5

C = 15.7 inches



D = 5 inches

Use 3.14 for pi when finding the circumference of the following circles:

Radius	Diameter	Circumference C = πD
	3 inches	
	12 feet	
	10 centimeters	
	1.5 yards	
	1 1/5 meters	
6 inches		
7 feet		
2 1/2 yards		
1.75 meters		
10 centimeters		

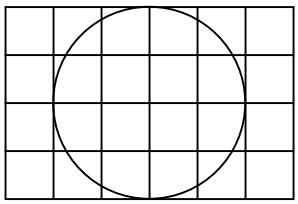
Mr. McGregor was planting a circular vegetable garden. He planned to plant a single row of rabbit repellant plants around the edge of the garden to keep out that pesky family. The three girls were bad enough, but the boy, Peter, was always getting at his carrots. The garden had a diameter of 12 feet. What circumference did Mr. McGregor have to consider to plant the outer edge?

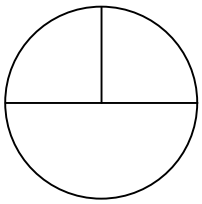
_____

Area of a Circle

The formula for finding the area of a **circle** is **$A = \pi R^2$.** Remember that area is the measurement of covering the surface of a particular space. Think of area as **tiling**. Area is measured in square units. Think of a grid of squares across the top of the circle. The number of square units needed to tile the surface of the circle is the area. The small "pieces" near the edge are combined to form whole squares by using the formula. There are usually some "leftovers", so the area of a circle is seldom expressed without a fraction or decimal.

Example:





R = 6 inches
D = 12 inches

$A = \pi R^2$
$A = 3.14 \times 36$
A = 113.04 square inches

Use 3.14 for pi when finding the area of the following circles. A calculator is permitted.

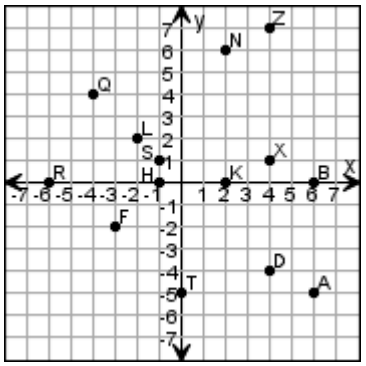
Radius	**Diameter**	**Area $A = \pi R^2$**
5 inches		
2 centimeters		
10 feet		
1 meter		
4.5 yards		
	10 feet	
	6 inches	
	15 meters	
	8 yards	
	4 1/2 miles	

Adapted from www.cdlponline.org/gedprint

Name _____ Date _____

The Coordinate Plane

Find each ordered pair. Write the letter for the point named by the ordered pair.

1. 

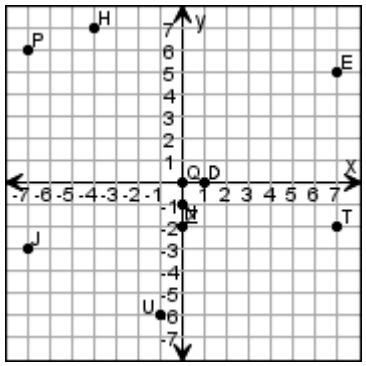
(-6, 0) _____

(6, 0) _____

(-2, 2) _____

(6, -5) _____

(-4, 4) _____

2. 

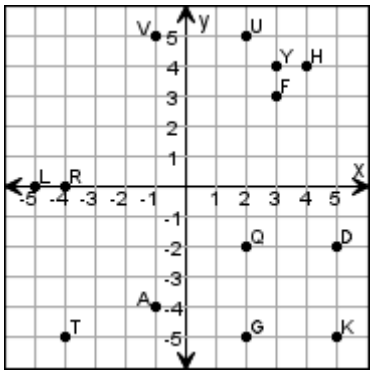
(-7, 6) _____

(0, -2) _____

(-4, 7) _____

(0, -1) _____

(1, 0) _____

3. 

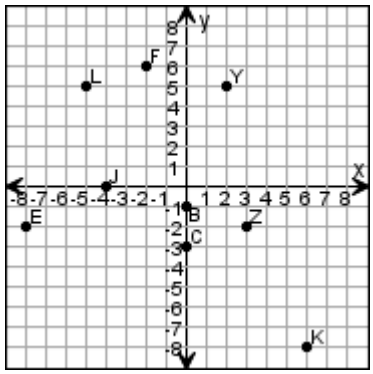
(5, -5) _____

(2, -2) _____

(2, 5) _____

(-4, -5) _____

(5, -2) _____

4. 

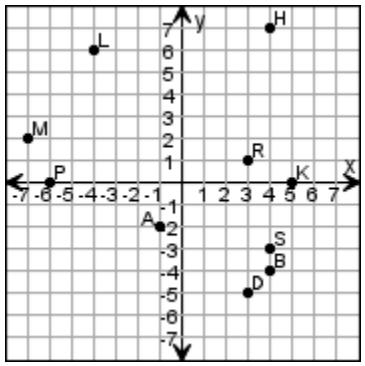
(-2, 6) _____

(-5, 5) _____

(2, 5) _____

(0, -1) _____

(-4, 0) _____

5. 

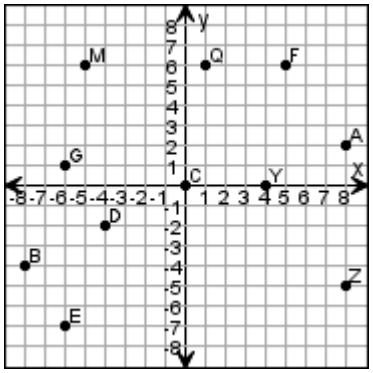
(-6, 0) _____

(-4, 6) _____

(-7, 2) _____

(-1, -2) _____

(3, -5) _____

6. 

(-4, -2) _____

(4, 0) _____

(8, 2) _____

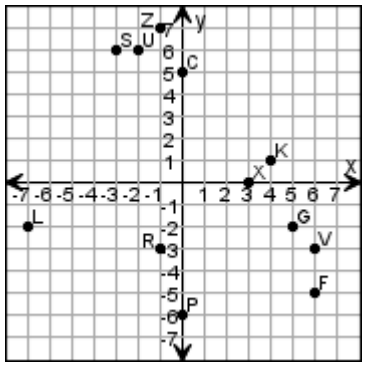
(-5, 6) _____

(-8, -4) _____

Name _____ Date _____

The Coordinate Plane

Write the coordinates for each point.

1. 

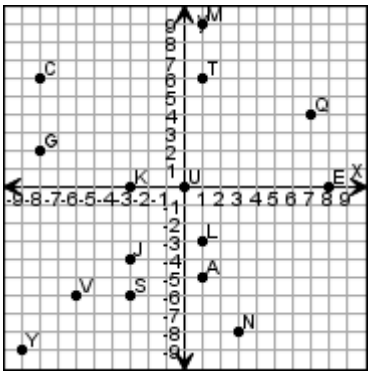
K _____

C _____

R _____

L _____

S _____

2. 

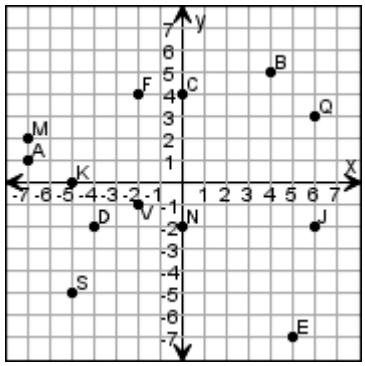
L _____

T _____

Y _____

M _____

J _____

3. 

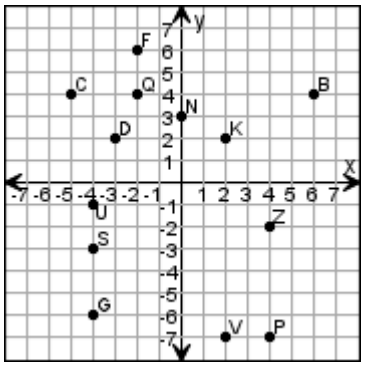
A _____

C _____

B _____

Q _____

J _____

4. 

U _____

C _____

P _____

G _____

Z _____

Adapted from edhelper.com

Patriotic Pair

Use the blank coordinate grid on page 90. Plot all the points to discover the patriotic pair.

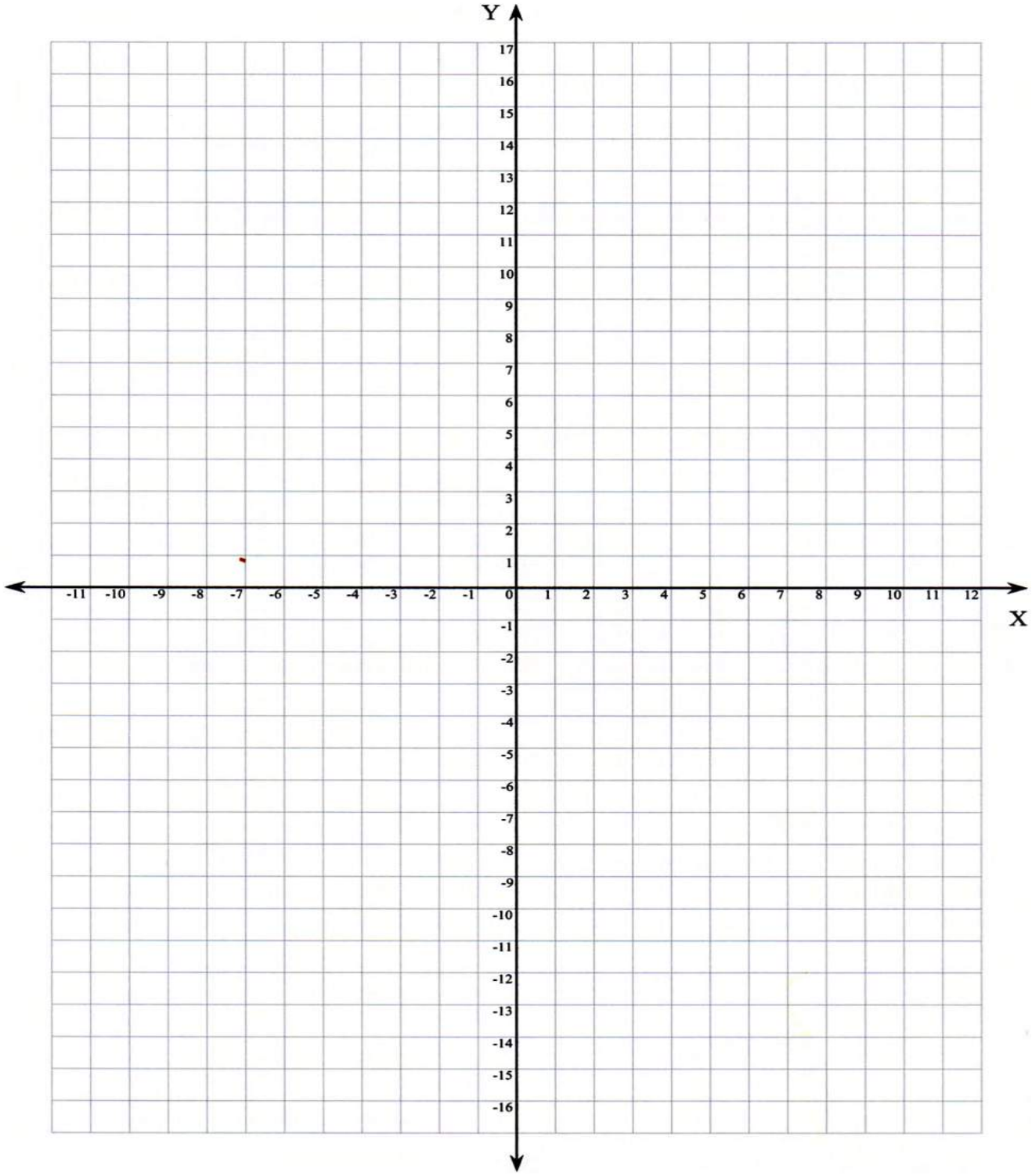
___ (-3,1)
___ (-9,1)
___ (-10,3)
___ (-12,4)
___ (-11,6)
___ (-12,7)
___ (-13,9)
___ (-13,12)
___ (-12,14)
___ (-10,16)
___ (-8,17)
___ (-6,17)
___ (-3,16)
___ (-1,15)
___ (-1,13)
___ (-2,12)
___ (-2,11)
___ (-1,10)
___ (-1,8)
___ (-2,8)
___ (-2,6)
___ (-1,5)
___ (-2,4)
___ (-4,4)
___ (-5,3)
___ (-3,1)
STOP

___ (4,0)
___ (3,-l)
___ (2,-3)
___ (2,-5)
___ (l,-6)
___ (2,-9)
___ (2,-10)
___ (0,-12)
___ (0,-13)
___ (2, -15)
___ (4,-15)
___ (8,-17)
___ (10,-16)
___ (11,-16)
___ (11,-15)
___ (9,-13)
___ (9,-12)
___ (10,-11)
___ (11,-11)
___ (12,-10)
___ (12,-7)
___ (13,-7)
___ (12,-5)
___ (12,-3)
___ (11,-2)
___ (10,0)
___ (8,1)
___ **(7,**1)
___ **(4,**0)
STOP

Plotting Points Player

Be the first to plot a point in each quadrant of the grid and you win !

- A game for 2 players
- Use 1 numbered coordinate grid.
- Write the numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, -1, -2, -3, -4, -5, -6, -7, -8 on index cards. One number on each card.
- The first player draws one card and uses this number for the X coordinate. Return the card and draw another, this number is the Y coordinate. Plot the point on the grid and label with your initials.
- The second player chooses 2 new cards and does the same.
- Take turns.
- The first player to plot an ordered pair in each quadrant wins.



Upside Down Calculator

Procedures:
1. Perform each of the indicated computations on the calculator.
2. Turn the calculator upside down and read the word answer.
3. A clue is given for each problem.

Calculation	Numerical Answer	Clue	Word Answer
0.140		A name of a state	_____
15 + 2 + 150 + 95 + 55		His story was a	_____
2101 × 9 × 2		An important book	_____
2538.67 × 2		They said a lot of	_____
501 ÷ 12500		After peeling onions you would	_____
(354 × 15) + 7		What you should never tell	_____
141 ÷ 200		The baritone sang	_____
48450 ÷ 6		A messy person	_____
40 ÷ 99		What Santa Clause said	_____
882 – 32		Opposite of buy	_____
(362536 + 61) ÷ 71		A girl's name	_____
463 × 79 – 1469		The capitol of Idaho	_____
1911 × 3		Snake-like fish	_____
15469 ÷ 20000 + 190 + 520		The name of an oil company	_____
193 + 879		It rings	_____
514 + 3237		A tropical	_____
106 × 35 – 5		The bottom of a shoe	_____
842 + 72		To make dirty	_____
1377 × 4		Person in charge	_____

(29 × 16 – 1) × 8	This is a big_____
625 ÷ 5/23 + 2463	They sting_____
(9 × 20) – 7	What Whitney was called_____
11 × 7 × 40	Musical instrument_____
½ × 500 × 140 + 7	Opposite of tight_____
625 × 2564 – 6382	Have to be paid each month_____

Follow-up—Make up some problems like this of your own.

This worksheet can be found in the GED Mathematics Training Institute Manual 2006
US Department of Education, Division of Adult Education and Literacy