

Special Education Math Test Answer Key

Directions: Click on the bookmarks to the left to go to a specific topic:

1) Round whole numbers.

What is 453 rounded to the nearest ten?

450

What is 54,735 rounded to the nearest hundred?

54,700

What is 276,485 rounded to the nearest thousand?

276,000

What is 93,587 rounded to the nearest ten thousand?

90,000

2) Convert fractions, decimals, percents and graphic representations.

Convert the following fractions to decimals and percents. Round your answers to thousandths:

$$\frac{3}{4} \quad .75 \quad 75\%$$

$$\frac{6}{7} \quad .857 \quad 86\%$$

$$\frac{2}{3} \quad .667 \quad 66.7\%$$

$$\frac{8}{9} \quad .89 \quad 89\%$$

Convert the following decimals to fractions and percents. Reduce the fractions:

$$.625 \quad \frac{5}{8} \quad 62.5\%$$

$$.25 \quad \frac{1}{4} \quad 25\%$$

$$.833 \quad \frac{5}{6} \quad 83.3\%$$

$$.8 \quad \frac{4}{5} \quad 80\%$$

Convert the following percents to fractions and decimals. Reduce the fractions:

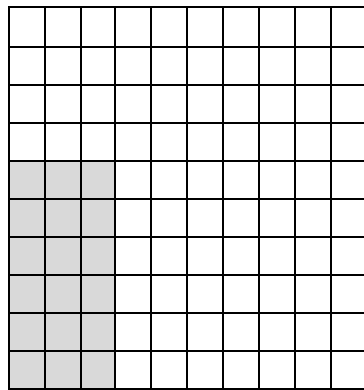
$$28\% \quad \frac{7}{25} \quad .28$$

$$35\% \quad \frac{7}{20} \quad .35$$

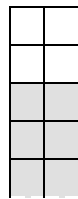
$$10\% \quad \frac{1}{10} \quad .1$$

$$84\% \quad \frac{21}{25} \quad .84$$

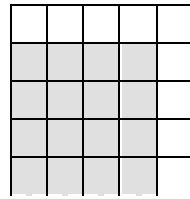
Give an equivalent fraction, decimal, and percent for each of the following. Reduce the fractions:



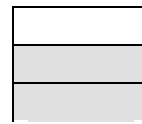
$$\frac{9}{10} \quad 90\% \quad .9$$



$$\frac{3}{5} \quad 60\% \quad .6$$



$$\frac{4}{5} \quad 80\% \quad .8$$



$$\frac{2}{3} \quad 66.7\% \quad .667$$

3) Identify numbers of greatest value, including fractions and decimals.

For each of the following lines, put the numbers in order from smallest to largest.

$$.006 \quad .0006 \quad .06 \quad .6 \quad \frac{2}{3} = .0006, .006, .06, .6, \frac{2}{3}$$

$$3 \quad .003 \quad .0003 \quad .03 \quad \frac{1}{3} = .0003, .003, .03, 3, \frac{1}{3}$$

$$.08 \quad .0008 \quad .8 \quad .008 = .0008, .008, .08, .8$$

$$\frac{1}{4} \quad \frac{1}{8} \quad \frac{1}{2} \quad \frac{1}{9} = \frac{1}{9}, \frac{1}{8}, \frac{1}{4}, \frac{1}{2}$$

$$\frac{2}{7} \quad \frac{6}{7} \quad \frac{8}{7} \quad \frac{1}{7} = \frac{1}{7}, \frac{2}{7}, \frac{6}{7}, \frac{8}{7}$$

4) Identify the equation represented by an exponent.
Express each of the following using an exponent.

$$7 \times 7 \times 7 \times 7 \times 7 \times 7 \quad 7^6$$

$$5 \times 5 \times 5 \times 5 \times 5 \quad 5^5$$

$$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \quad 2^{10}$$

Express each of the following as repeated multiplication

$$2^3 = 2 \times 2 \times 2$$

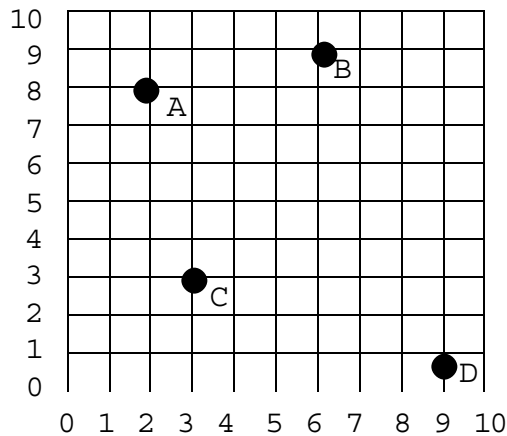
$$3^2 = 3 \times 3$$

$$5^4 = 5 \times 5 \times 5 \times 5$$

$$4^5 = 4 \times 4 \times 4 \times 4 \times 4$$

5) Identify the coordinates for points on a graph.

Identify the coordinates for the points on the following graph.



$$A = (2, 8)$$

$$B = (6, 9)$$

$$C = (3, 3)$$

$$D = (9, 1)$$

6) Identify appropriate equations to solve word problems, including addition, subtraction, multiplication, division of whole numbers, fractions and money.

Bill made 320 cookies for his school bake sale. He packaged the cookies in groups of 8.
Create and solve an equation that represents the number of cookie packages Bill sold.

$$320 \div 8 = 40$$

Jill spent \$4.50 on supplies to make mints. She sold 28 mints at \$25 each. Create and solve an equation that will tell you how much profit Jill made on the mints.

$$(28 \times 25) - 4.50 = \$2.50$$

Will was making cupcakes and decided to triple the recipe. The original recipe calls for $1\frac{2}{3}$ cups of sugar. Create and solve an equation that represents how much sugar Will used for his cupcakes.

$$1\frac{2}{3} \times 3 = 5$$

7) Identify missing numbers or symbols in an equation.

What symbol belongs in the blank for the following equations ($<$, $>$, $=$)?

$$5.843 \underline{>} 5.35$$

$$8.467 \underline{>} 8.462$$

$$4.679 \underline{<} 4.976$$

Solve for N.

$$(4 \times 3) + N = 17 \qquad N = 5$$

$$(6 \times 8) \times 3 = (8 \times N) \times 3 \qquad N = 6$$

$$4 \times N = 2 \times 10 \qquad N = 5$$

$$3N = 6 \qquad N = 2$$

$$3N + 4 = 19 \qquad N = 5$$

8) Add, subtract, multiply and divide:

a) Whole numbers

$$512 + 6789 = 7301$$

$$842 + 1973 + 12 = 2827$$

$$6548 - 4567 = 1981$$

$$524 \times 815 = 427,060$$

$$2544 \div 53 = 48$$

b) Fractions (express in simplest form)

$$\frac{1}{2} + \frac{2}{3} = 1\frac{1}{6}$$

$$\frac{3}{4} - \frac{1}{8} = \frac{5}{8}$$

$$\frac{4}{5} \times \frac{2}{3} = \frac{8}{15}$$

$$\frac{3}{4} \div 4 = \frac{3}{16}$$

$$\frac{4}{5} \times 2 = 1\frac{3}{5}$$

$$\frac{3}{4} \div \frac{1}{2} = 1\frac{1}{2}$$

c) Decimals

$$4.58 + 6.8974 = 11.4774$$

$$8.57 + 98.423 + 1894.2 = 2001.193$$

$$84.846 - 8.74 = 76.106$$

$$84.5 \times 84.57 = 7146.165$$

$$1.272 \div 24 = 5.3$$

d) Mixed numbers (express answer in simplest form)

$$4.25 + \frac{1}{2} = 4.75 \text{ or } 4\frac{3}{4}$$

$$5.63 - \frac{3}{4} = 4.88 \text{ or } 4\frac{22}{25}$$

$$\$7.25 \times 25 = \$181.25$$

$$.845 \div 5 = .169$$

e) Negative numbers

$$-6 + 4 = -2$$

$$-6 - 4 = -10$$

$$-6 \times 3 = -18$$

$$-6 \div 3 = -2$$

9) Find:

a) Multiples

Find the lowest common multiple for each of the following lines of numbers.

2 6 4 12

8 5 2 40

b) Greatest common factors

Find the greatest common factor for each of the following lines of numbers.

46 69 23

24 36 12

c) Prime numbers

Circle all of the following that are prime numbers.

2 6 7 9 11 12 15 17

d) Equivalent fractions

Find two equivalent fractions for the following

$\frac{3}{4}$ $\frac{6}{8}$ $\frac{9}{12}$ There could be more answers

$\frac{5}{8}$ $\frac{10}{16}$ $\frac{20}{32}$ There could be more answers

$\frac{7}{8}$ $\frac{14}{16}$ $\frac{21}{24}$ There could be more answers

e) Simplest form of fractions

What is the simplest form of the following fractions?

$$\frac{36}{24} \quad 1\frac{1}{2}$$

$$\frac{36}{6} \quad 6$$

$$\frac{24}{32} \quad \frac{3}{4}$$

f) Averages

Find the average of each line of numbers.

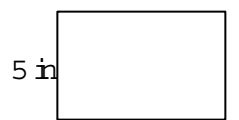
$$4, 8, 5, 6 \quad 5.75$$

$$7, 5, 4, 9 \quad 6.25$$

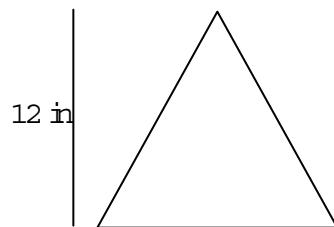
$$24, 85, 76, 32 \quad 54.25$$

g) Area

Find the area of the following.



40 square inches



90 square inches

h) Reciprocals

Find the reciprocal of each of the following.

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

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

$$1\frac{1}{2} = \frac{2}{3}$$

10) Compute arithmetic sequences.

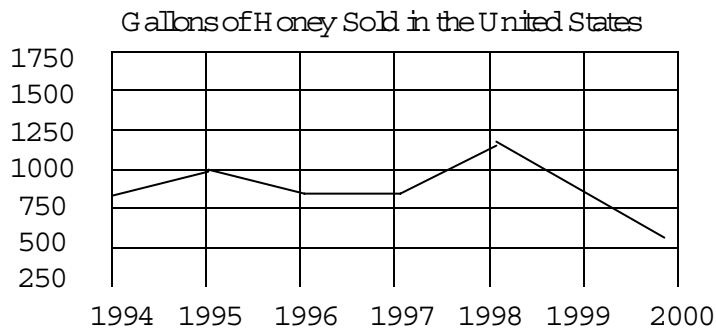
What are the next 4 numbers in the following patterns?

0, 3, 6, 9, 12, 15, 18, 21, 24

2, 8, 14, 20, 26, 32, 38, 44

1, 3, 5, 7, 9, 11, 13, 15, 17

11) Interpret graphs.



Use the graph to answer the following questions.

About how much honey was sold in the United States in 1996 and 1998?

1996 ~ 875 gallons, 1998 ~ 1125 gallons

Which year was the most honey sold?

1998

Which year was the least honey sold?

2000

How much more honey was produced in 1998 than in 2000?

~ 625 gallons

How much total honey was produced from 1995 through 1998?

~ 3875 gallons

12) Solve story problems involving:

a) Addition, subtraction, multiplication, and division

Marie bought 4 dozen donuts for her birthday party. If 32 people came to her party, how many of them could have 2 donuts?

16

Marie's mom bought 13 yellow balloons, 16 red balloons, and 27 blue balloons. How many balloons were there all together?

56

If you go to school 5 days per week, and there are 12 weeks in a semester, how many days of school do you attend?

60

Bob's family had a garage sale. They sold 25 items at equal prices. From the garage sale they made \$330.00. How much did they sell each item for?

\$13.20

b) Units of measurement

Sally was trying to figure out the distance from her home to a basketball game she was going to attend. She looked on a map and discovered that the distance between the places was 325 inches. The scale for the map was 1 inch equals 150 miles (1" = 150 mi.). How many miles were between the basketball game and her home.

487.5 miles

Kurt ran a 4000 meter race. How many kilometers did he run? How many millimeters?

4 kilometers, 4,000,000 millimeters

Sally ran a 23 kilometer race. How many meters did she run? How many millimeters?

23,000 meters, 23,000,000 millimeters

Fred ran a 173000 millimeter race. How many meters did he run? How many kilometers?

173 meters, 173 kilometers

Dan used 2 pints of water in a recipe. How many cups of water did he use? How many quarts? How many gallons?

4 cups, 1 quart, $\frac{1}{4}$ gallon

Rachel used 1 gallon of milk for a drink mix. How many cups did she use? How many pints? How many quarts?

16 cups, 8 pints, 4 quarts

Paul used 4 cups flour to make bread. How many pints did he use? How many quarts? How many gallons?

2 pints, 1 quart, $\frac{1}{4}$ gallon

Whitney used 3 quarts of peaches for a dinner party. How many cups did she use? How many pints? How many gallons?

12 cups, 6 pints, $\frac{3}{4}$ gallon

Troy's pinewood derby car weighed 12 grams. How many milligrams did the car weigh? How many kilograms?

12,000 milligrams, .012 kilograms

Savannah ate 20 milligrams of cereal for breakfast. How many grams did she eat? How many kilograms?

.02 grams, .00002 kilograms

Bob bench-pressed 20 kilograms of weight. How many grams did he press? How many milligrams?

20,000 grams, 20,000,000 milligrams

c) Basic probability (round decimals to hundredths)

George, Fred, Mary, Betty, and Anne all want to win a contest. There will only be one winner among the five people. What is the probability that a boy will win? (Express as a decimal or a percent)

.4 or 40%

What is the probability that a person will draw a queen of diamonds out of a fair deck of 52 cards? (Express as a decimal or a percent)

.0192 or 1.92%

What is the probability that a person will draw any queen (remember, there are 4 of them) out of a fair deck of 52 cards? (Express as a decimal or a percent)

.0769 or 7.69%

d) Percentage

Vivian has a cup that is 35.6% full. What percentage of the cup is empty?

64.4%

Erin's class has 16 boys and 19 girls. What percentage of boys and what percentage of girls are there in the class?

45.7% boys and 54.3% girls

e) Multiple Steps that involve fraction, time, and money

Tom sold three six-packs of soda to each of four friends. He collected \$21.60. How much was each soda?

\$0.30

Joe Enron sold stock in a company. Each share was worth 2% of the company. George bought 2 shares. The company was worth \$5200.00. How much were George's shares worth?

\$208

Shelly works for Ronda from sun up to sun down. She earns \$0.32 per hour. On January 21, sunrise was at 6:30 a.m. and sunset was at 5:15 p.m. How much did she earn?

\$3.44

13) Identify basic geometric objects.

Identify the following geometric objects.



Ray

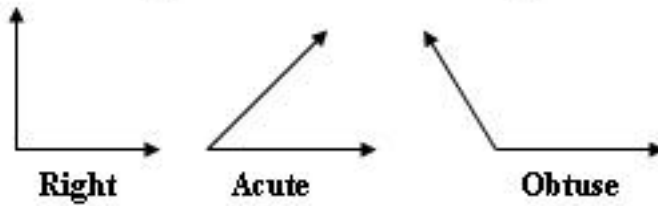


Line

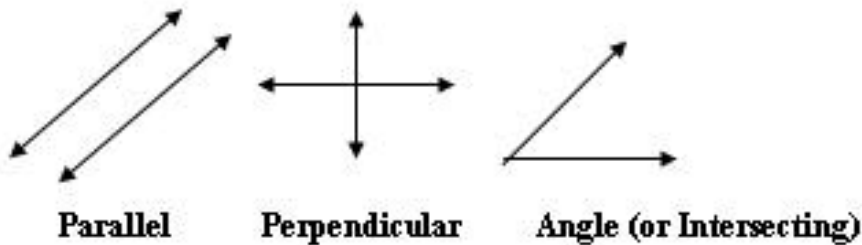


Line Segment

What kind of angles are each of the following?



What kind of lines are each of the following?



What do the following represent in the accompanying picture?

- The gray shaded portion **Area**
- The Line XY **Radius**
- The Line XZ **Diameter**
- The line around the outside of the circle **Circumference**

