Special Education Practice Math Text

With Answers!

Rounding whole numbers

1) What is 453 rounded to the nearest ten? 450

2) What is 54,735 rounded to the nearest hundred? 54,700

3) What is 276,485 rounded to the nearest thousand? 276,000

4) What is 93,587 rounded to the nearest ten thousand? 90,000

Convert fractions, decimals, percentages and graphic representations

5) Convert the following fractions to decimals and percentages. Round decimals to thousandths:

a. $^3/_4$ 0.75 75% **b.** $^6/_7$ 0.857 86% **c.** $^2/_3$ 0.667 67% **d.** $^8/_9$ 0.889 89%

6) Convert the following decimals to fractions and percentages:
Express fractions in simplest form (mixed numeral, where appropriate)

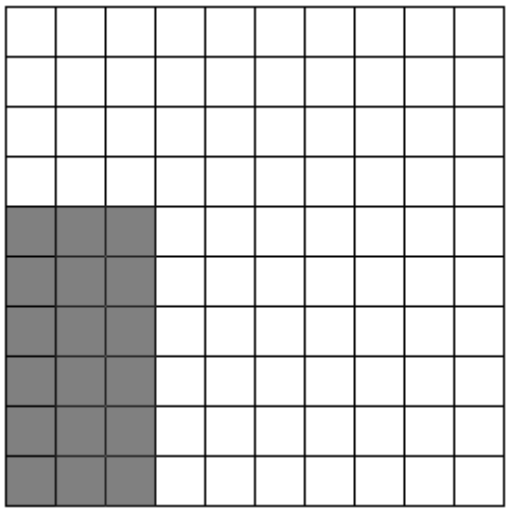
a. 0.625 $^5/_8$ 62.5% **b.** 0.25 $^1/_4$ 25% **c.** 0.833 $^5/_6$ 83.3% **d.** 0.8 $^4/_5$ 80%

7) Convert the following percentages to fractions and decimals:
Express fractions in simplest form (mixed numeral, where appropriate)

a. 28% $^7/_{25}$ 0.28 **b.** 35% $^7/_{20}$ 0.35 **c.** 10% $^1/_{10}$ 0.1 **d.** 84% $^{21}/_{25}$ 0.84

8) Give an equivalent fraction, decimal and percentage for each of the following:
Express fractions in simplest form (mixed numeral, where appropriate)

a.

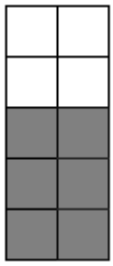


$^9/_{50}$

18%

0.18

b.

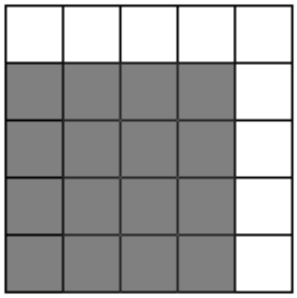


$^3/_5$

60%

0.6

c.



$^{16}/_{25}$

64%

0.64

d.

$^2/_3$

66.7%

0.667

Comparing the value of fractions and decimals

9) For each of the following lines, put the numbers in order from smallest to largest:

a. 0.006	0.0006	0.06	0.6	$^2/_3$	0.0006	0.006	0.06	0.6	$^2/_3$
b. 0.3	0.003	0.0003	0.03	$^1/_3$	0.0003	0.003	0.03	0.3	$^1/_3$
c. 0.08	0.0008	0.8	0.008		0.0008	0.008	0.08	0.8	
d. $^1/_4$	$^1/_8$	$^1/_2$	$^1/_9$		$^1/_9$	$^1/_8$	$^1/_4$	$^1/_2$	
e. $^2/_7$	$^6/_7$	$^8/_7$	$^1/_7$		$^1/_7$	$^2/_7$	$^6/_7$	$^8/_7$	

Understanding exponents

10) Express each of the following using an exponent:

a. 7 x 7 x 7 x 7 x 7 x 7 7^6

b. 5 x 5 x 5 x 5 x 5 5^5

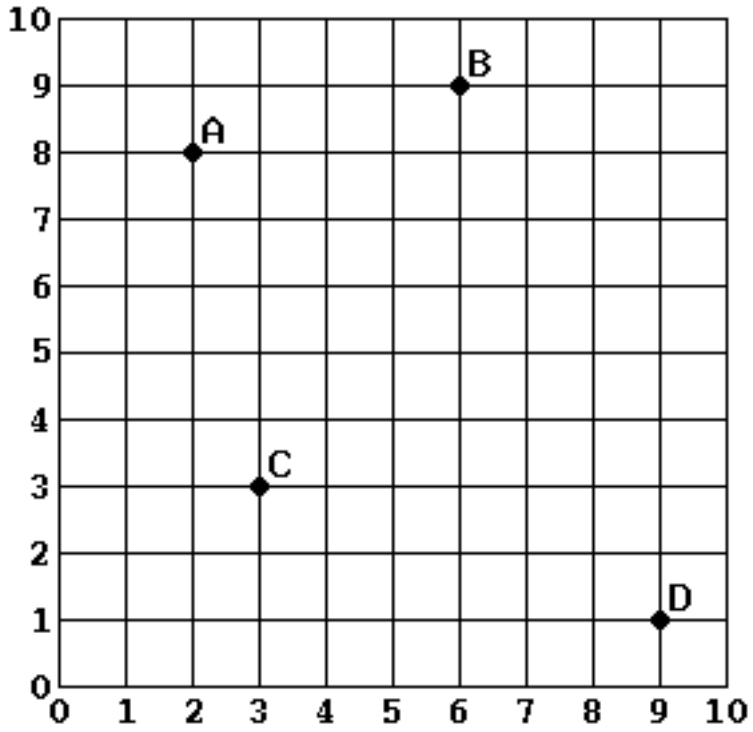
c. 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 2^{10}

11) Express each of the following as a repeated multiplication:

a. 2^3 2 x 2 x 2 **b.** 3^2 3 x 3 **c.** 5^4 5 x 5 x 5 x 5 **d.** 4^5 4 x 4 x 4 x 4 x 4

Understanding coordinate planes

12) Identify the coordinates for each point on the following graph:



A = (2, 8)

B = (6, 9)

C = (3, 3)

D = (9, 1)

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

13) 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. $320 \div 8 = 40$

14) Jill spent $4.50 on supplies to make mints. She sold 28 mints for $0.25 each. Create and solve an equation that will tell you how much profit Jill made on the mints. $(28 \times 0.25) - 4.50 = 2.50$

15) Will was making cupcakes and decided to triple the recipe. The original recipe calls for $1\ ^2/_3$ cups of sugar. Create and solve an equation that represents how much sugar Will used for his cupcakes. $1\ ^2/_3 \times 3 = 5$

Identify missing number or symbols in an equation

16) What symbol belongs in the blank for the following equations (<, >, =):

a. 5.843 __ 5.35 >

b. 8.467 __ 8.462 >

c. 4.679 __ 4.976 <

17) Solve for N:

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

b. $(6 \times 8) \times 3 = (8 \times N) \times 3$ N = 6

c. $4 \times N = 2 \times 10$ N = 5

d. $3N = 6$ N = 2

e. $3N + 4 = 19$ N = 5

Add, subtract, multiply and divide

18) Whole numbers:

a. $512 + 6789 =$ 7301

b. $842 + 1973 + 12 =$ 2827

c. $6548 - 4567 =$ 1981

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

e. $2544 \div 53 =$ 48

19) Fractions: *express fractions in simplest form (mixed numeral, where appropriate)*

a. $^1/_2 + {}^2/_3 =$ $1\ ^1/_6$

b. $^3/_4 - {}^1/_8 =$ $^5/_8$

c. $^4/_5 \times {}^2/_3 =$ $^8/_{15}$

d. $^3/_4 \div 4 =$ $^3/_{16}$

e. $^4/_5 \times 2 =$ $1\ ^3/_5$

f. $^3/_4 \div {}^1/_2 =$ $1\ ^1/_2$

20) Decimals:

a. 4.58 + 6.8974 = 11.4774

b. 8.57 + 98.423 + 1894.2 = 2001.193

c. 84.846 – 8.74 = 76.106

d. 84.5 × 84.57 = 7146.165

e. 1.272 ÷ 0.24 = 5.3

21) Mixed numbers: *express fractions in simplest form (mixed numeral, where appropriate)*

a. $4.25 + 1/2 =$ 4.75 or $4\ 3/4$

b. $5.63 - 3/4 =$ 4.88 or $4\ 22/25$

c. \$7.25 × 25 = \$181.25

d. 0.845 ÷ 5 = 0.169

22) Negative numbers:

a. −6 + 4 = −2

b. −6 – 4 = −10

c. −6 × 3 = −18

d. −6 ÷ 3 = −2

Least Common Multiple and Greatest Common Factor

23) Find the least common multiple for each of the following lines of numbers:

a. 2 6 4 12

b. 8 5 2 40

24) Find the greatest common factor for each of the following lines of numbers:

a. 46 69 23

b. 24 36 12

Prime Numbers

25) Circle all of the following numbers which are prime:

2 6 7 9 11 12 15 17

Equivalent Fractions

26) Find two equivalent fractions for each of the following:

a. $3/4$ $6/8$ $9/12$

b. $5/8$ $10/16$ $20/32$

c. $7/8$ $14/16$ $21/24$

There could be many more answers to these.

Simplest form of fractions

27) Find the simplest form of the following fractions: *(mixed numeral, where appropriate)*

a. $^{36}/_{24}$ $1\ ^{1}/_{2}$

b. $^{36}/_{6}$ 6

c. $^{24}/_{32}$ $^{3}/_{4}$

Averages

28) Find the average of each line of numbers:

a. 4, 8, 5, 6 5.75

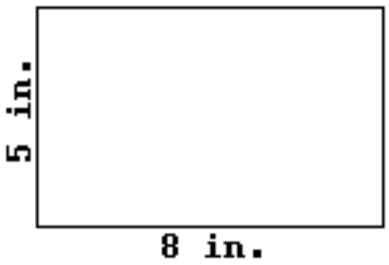
b. 7, 5, 4, 9 6.25

c. 24, 85, 76, 32 54.25

Area

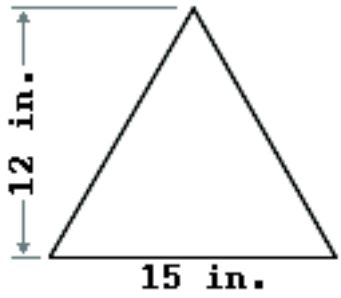
29) Find the area of the following:

a.



40 square inches

b.



90 square inches

Reciprocals

30) Find the reciprocal of each of the following: *express fractions in simplest form (mixed numeral, where appropriate)*

a. $^{1}/_{3}$ 3

b. 4 $^{1}/_{4}$

c. $1\ ^{1}/_{2}$ $^{2}/_{3}$

Compute arithmetic sequences

31) What are the next 4 numbers in the following patterns:

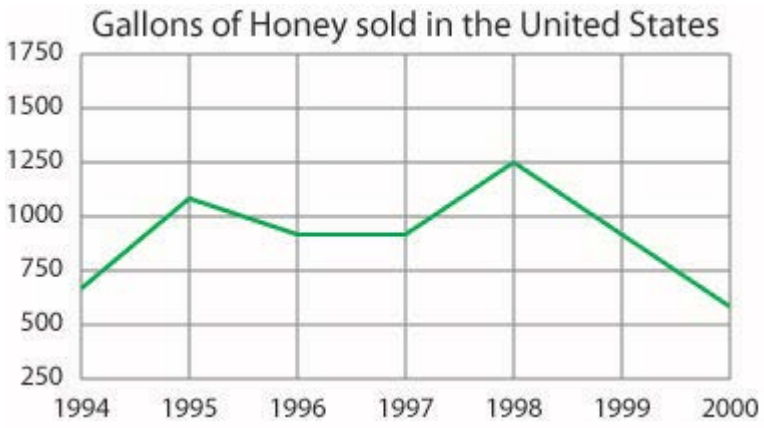
a. 0, 3, 6, 9, 12... 15, 18, 21, 24

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

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

Interpret graphs

32) Use the graph to answer the following questions:



a. About how much honey was sold in the United States in 1996 and 1998? ~875 gallons, ~1125 gallons

b. Which year was the most honey sold? 1998

c. Which year was the least honey sold? 2000

d. How much more honey was produced in 1998 than in 2000? ~625 gallons

e. How much total honey was produced form 1995 through 1998? ~3875 gallons

Solve story problems involving…

33) Addition, subtraction, multiplication and division:

a. 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

b. Marie's mom bought 13 yellow balloons, 18 red balloons, and 27 blue balloons. How many balloons were there all together? 58

c. 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

d. 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

34) Units of measurement:

a. 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 3.25 inches. The scale for the map was 1 inch equals 150 miles (1" = 150mi.). How many miles were between the basketball game and her home? 487.5 miles

b. Kurt ran a 4000 meter race. How many kilometers did he run? How many millimeters? 4 kilometers, 4,000,000 millimeters

c. Sally ran a 23 kilometer race. How many meters did she run? How many millimeters? 23,000 meters, 23,000,000 millimeters

d. Fred ran a 173000 millimeter race. How many meters did he run? How many kilometers? 173 meters, 0.173 kilometers

e. 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, $1/4$ gallon

f. Rachel used 1 gallons of milk for a drink mix. How many cups did she use? How many pints? How many quarts? 16 cups, 8 pints, 4 quarts

g. Paul used 4 cups of flour to make bread. How many pints did he use? How man quarts? How many gallons? **2 pints, 1 quart, $^1/_4$ gallon**

h. 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, $^3/_4$ gallon**

i. Troy's pinewood derby car weighed 12 grams. How many milligrams did the car weight? How many kilograms? **12,000 milligrams, 0.012 kilograms**

j. Savannah ate 20 milligrams of cereal for breakfast. How many grams did she eat. How many kilograms? **0.02 grams, 0.00002 kilograms**

k. Bob bench-pressed 20 kilograms of weight. How many grams did he press? How many milligrams? **20,000 grams, 20,000,000 milligrams**

35) Basic probability (round decimals to hundredths):

a. 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) **0.4 or 40%**

b. 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) **0.0192 or 1.92%**

c. 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) **0.0769 or 7.69%**

36) Percentage:

a. Vivian has a cup that is 35.6% full. What percentage of the cup is empty? **64.4%**

b. 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**

37) Multiple steps that involve fraction, time and money:

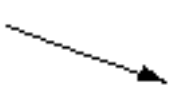
a. Tom sold three six-packs of soda to each of four friends. He collected $21.60. How much was each soda? **$0.30**

b. 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? **$208.00**

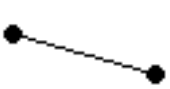
c. Shelly works for Ronda from sun up to sun down. She earned $0.32 per hour. On January 21, sunrise was at 6:30 A.M. and sunset was at 5:15 P.M. How much did she earn? **$3.44**

Geometry concepts

38) Identify the following geometric objects:



a. **Ray or Vector**



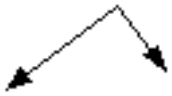
b. **Line Segment**

c. **Line**

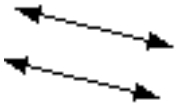
39) What kind of angles are each of the following:

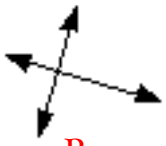
a.  Acute

b.  Obtuse

c.  Right

40) What kind of lines are each of the following:

a.  Parallel

b.  Perpendicular

c.  Angle or Intersecting

41) What do the following represent in the accompanying picture:

a. The gray shaded portion — Area

b. The line AC — Radius

c. The line BC — Diameter

d. The line around the outside of the circle — Circumference