Fifth Grade
Summer Math Practice

Summer is a wonderful time to relax and have fun! It is also the perfect time to stay sharp and practice your math facts! Please practice multiplication and division facts through 12.

You can use flash cards, pencil and paper, or computer games to practice your facts. Listed below are some websites to help you practice!. **Each time that you practice, record the date and the number of minutes that you've practiced on the log attached. Remember to get a parent to sign it, too!** Try to practice at least 200 total minutes over the summer (that's only about 3 minutes per day!). Knowing your basic math facts is a primary building block to success in math class.

https://www.multiplication.com/games

https://www.mathmammoth.com/practice/multiplication

https://www.timestables.com/

https://www.mathplayground.com/index_multiplication_division.html

This log will be due on the first day back to school in the fall and will count as a homework grade. Please see the grade scale below for details.

200- Minutes	100%	199-150 Minutes	90%
149-100 Minutes	80%	99-50 Minutes	70%
		49-0 MInutes	60%

Best,
Danielle Brinkofski & Stacey Miller
Fifth Grade Teachers

Fifth Grade
Summer Math Practice

Math Facts Recording Sheet

	Date	Amount of Time (minutes)	Parent Initials
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6th grade Math

Adding & Subtracting Decimals

1. Write the problem vertically, lining up the decimal points.
2. Add additional zeroes at the end, if necessary, to make the numbers have the same number of decimal places.
3. Add/subtract as if the numbers are whole numbers
4. Bring the decimal point straight down

ex: 14.2 - 7.934

$$\begin{array}{r} 14.200 \\ -\ 7.934 \\ \hline 6.266 \end{array}$$

Multiplying Decimals

1. Write the problem vertically with the numbers lined up to the right. The decimal points do NOT need to be lined up.
2. Ignore the decimals and multiply as if the numbers are whole numbers.
3. Count the total number of decimal places in the factors and put a decimal point in the product so that it has that same number of decimal places.

ex: 6.94 x 7.8

$$\begin{array}{r} 6.94 \\ \times\ 7.8 \\ \hline 5552 \\ +\ 48580 \\ \hline 54132 \end{array}$$

6.94 → 2 decimal places
7.8 → + 1 decimal place
3 decimal places

54.132

Dividing Decimals

1. Write the dividend under the long division symbol and the divisor to the left of it.
2. Move the decimal point in the divisor after the number to turn it into a whole number and then move the decimal in the dividend the same number of places. Then bring it up.
3. Divide as if the numbers are both whole numbers.
4. Annex zeros in the dividend as needed until there is no remainder. If your answer is a repeating decimal, write the answer using bar notation.

ex: 25.3 ÷ 0.3

$$\begin{array}{r} 84.\overline{3} \\ 0.3\overline{)25.310} \\ -24 \\ \hline 13 \\ -12 \\ \hline 10 \\ -\ 9 \\ \hline 1 \end{array}$$

Order of Operations

1. Grouping Symbols (parentheses, brackets, etc.)
2. Exponents
3. Multiplication & Division (left to right)
4. Addition & Subtraction (left to right)

ex: 5 + 4(3 - 1.2)

5 + 4(1.8)

5 + 7.2

12.2

Evaluate each expression.

1. $5.983 + 2.99$	2. $224 - 56.73$	3. $6.12 - 4.923$
4. $24.5 \cdot 3.2$	5. $0.23 \cdot 7$	6. $3.86 \cdot 9.15$
7. $14.8 \div 5$	8. $46.3 \div 1.5$	9. $147 \div 2.25$
10. $24.33 - 2.5 \cdot 7$	11. $3.9 + 4.5^2$	12. $9.25(18.4 - 2 \cdot 1.2)$

Solve each word problem, showing all work.

13. Jeff had \$46.18 in his wallet Monday morning. He gave half of his money to his brother. He then bought two donuts for \$0.75 each and a cup of coffee for \$2.99. How much money did Jeff have left?	14. Five friends split a \$65.20 bill at a restaurant. They also each left \$2.75 for the tip. How much money did each person pay in all?

Adding Fractions & Mixed Numbers

1. Find a common denominator for the two fractions.
2. Add the two numerators and keep the denominator the same.
3. Add the whole numbers.
4. Simplify the answer and/or change improper fraction answers to mixed numbers.

ex: $3\frac{3}{4} + 2\frac{1}{2}$

$$3\frac{3}{4} = 3\frac{3}{4}$$
$$+\ 2\frac{1}{2} = 2\frac{2}{4}$$
$$5\frac{5}{4} = \boxed{6\frac{1}{4}}$$

Subtracting Fractions & Mixed Numbers

1. Find a common denominator for the two fractions.
2. Subtract the two numerators and keep the denominators the same. If the top numerator is smaller than the bottom numerator, borrow from the whole number and rename the top fraction.
3. Subtract the whole numbers.
4. Simplify the answer.

ex: $5\frac{1}{4} - 1\frac{2}{3}$

$$5\frac{1}{4} = 5\frac{3}{12} = 4\frac{15}{12}$$
$$-\ 1\frac{2}{3} = 1\frac{8}{12} = 1\frac{8}{12}$$
$$\boxed{3\frac{7}{12}}$$

Multiplying Fractions & Mixed Numbers

1. Turn any mixed numbers and whole numbers into improper fractions.
2. Cross-simplify if possible.
3. Multiply the numerators and then multiply the denominators
4. Simplify the answer and/or change improper fraction answers to mixed numbers.

ex: $2\frac{1}{6} \cdot \frac{4}{7}$

$$\frac{13}{3\cancel{6}} \cdot \frac{\cancel{4}^{2}}{7} = \frac{26}{21} = \boxed{1\frac{5}{21}}$$

Dividing Fractions & Mixed Numbers

1. Turn any mixed numbers and whole numbers into improper fractions.
2. Keep the first fraction the same, change the division to multiplication, and flip the second fraction to its reciprocal.
3. Multiply the fractions.
4. Simplify the answer and/or change improper fraction answers to mixed numbers.

ex: $7 \div 1\frac{3}{4}$

$$\frac{7}{1} \div \frac{7}{4}$$
$$\downarrow$$
$$\frac{1\cancel{7}}{1} \cdot \frac{4}{\cancel{7}_{1}} = \frac{4}{1} = \boxed{4}$$

Evaluate each expression.

15. $\frac{4}{5} + \frac{3}{4}$	16. $4\frac{2}{7} + 2\frac{9}{14}$	17. $8\frac{11}{12} + 9\frac{5}{18}$
18. $6 - \frac{3}{8}$	19. $8\frac{3}{5} - 2\frac{1}{3}$	20. $4\frac{1}{6} - \frac{8}{9}$
21. $\frac{4}{25} \cdot \frac{15}{16}$	22. $2\frac{3}{4} \cdot 8$	23. $6\frac{5}{8} \cdot 3\frac{1}{2}$
24. $\frac{7}{9} \div \frac{2}{3}$	25. $\frac{4}{5} \div 10$	26. $5\frac{2}{3} \div 2\frac{5}{6}$

Solve each word problem, showing all work.

27. Jaimie ran $3\frac{1}{2}$ miles on Monday. She ran half as far on Tuesday as she did on Monday. How far did Jaimie run in all on Monday and Tuesday?	28. A $5\frac{1}{2}$ quart pot is filled $\frac{2}{3}$ of the way with water. How many more quarts of water can the pot hold?

Ratios

Ratios are comparisons of two quantities.
There are 3 different ways to write ratios:

- Fraction $\left(\frac{A}{B}\right)$
- Colon (A:B)
- Word Form (A to B)

Ratios can be simplified just like fractions.

ex: write the ratio of triangles to circles in 3 ways: ▲▲▲▲●●

$\frac{4}{2} = \boxed{\frac{2}{1},\ 2:1,\ 2 \text{ to } 1}$

Rates & Unit Rates

Rates are ratios that compare quantities measured in different units.
A unit rate is a rate with a denominator of 1.

To convert a rate to a unit rate:

1. Divide the numerator by the denominator
2. Either write your answer as a fraction with a label for the both the numerator and denominator OR as one number labeled with the first unit "per" the second unit

ex: express as a unit rate: 125 miles in 4 hours

$\frac{125 \text{ mi}}{4 \text{ hr}}$ $125 \div 4 = 31.25$

$\boxed{\frac{31.25 \text{ mi}}{1 \text{ hr}} \text{ or } 31.25 \text{ miles per hr}}$

Fractions, Decimals, & Percent

To convert a:

- Decimal to Percent: move the decimal point 2 places to the right — ex: $0.345 = \boxed{34.5\%}$
- Percent to Decimal: move the decimal point 2 places to the left — ex: $.7\% = \boxed{0.07}$
- Decimal to Fraction: write the decimal over the place value of the last digit and then simplify — ex: $0.008 = \frac{8}{1000} = \boxed{\frac{1}{125}}$
- Fraction to Decimal: divide the numerator by the denominator — ex: $\frac{1}{5} = 5\overline{)1.0}$ $\boxed{0.2}$
- Percent to Fraction: write the percent over 100 and then simplify — ex: $45\% = \frac{45}{100} = \boxed{\frac{9}{20}}$
- Fraction to Percent: convert the fraction to a decimal and then convert the decimal to a percent — ex: $\frac{3}{10} = 0.3 = \boxed{30\%}$

Percent of a Number

1. Turn the percent to a fraction or decimal.
2. Multiply the fraction/decimal by the number.

ex: Find 18% of 40

$0.18 \cdot 40 = \boxed{7.2}$

Write each ratio in 3 ways.

29. A bank contains 15 pennies and 12 nickels. Write the ratio of nickels to pennies.	30. A bowl contains 6 apples and some bananas. If there are a total of 10 pieces of fruit, find the ratio of apples to bananas.

Convert each rate to a unit rate.

31. $4.25 for 64 fluid ounces	32. 297 miles on 11 gallons of gas	33. 124 feet in 10 seconds

Complete the chart by converting each number to a percent, fraction, and/or decimal.

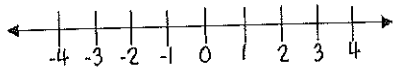
Fraction	Decimal	Percent
34. $\frac{3}{8}$		
35.	0.45	
36.		72%
37.	0.1	
38. $\frac{3}{200}$		

Find each percent of a number.

39. 30% of 90	40. 15% of 38	41. 50% of 86
42. 75% of 160	43. 24% of 35	44. 2% of 74

Comparing Integers

Integers are numbers without fractional parts. They can be positive, negative, or zero. The further right a number is on the number line, the greater it is.



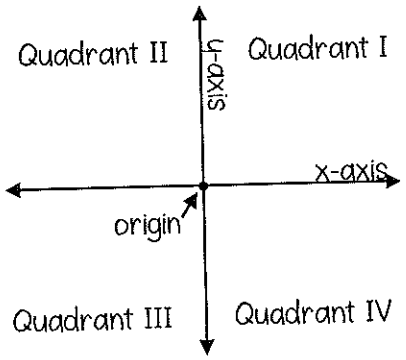
The absolute value of a number is the distance the number is from zero.

ex: compare with <, >, or =

$-7 \bigcirc |-9|$ ← The absolute value of $-9 = 9$

$-7 \boxed{<} 9$

The Coordinate Plane

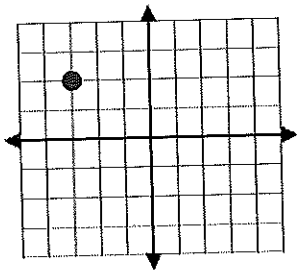


Ordered Pair: (x, y)

To graph a point on the coordinate plane, start at the origin. The first number in the ordered pair (the x-coordinate) tells you how far left (if negative) or right (if positive) to move. The second number (the y-coordinate) tells you how far up (if positive) or down (if negative) to move.

ex: Graph the point (-3, 2) and state the quadrant in which it is located.

Start at the origin, and move LEFT 3 and UP 2

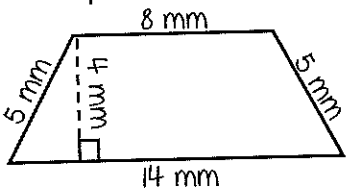


Quadrant II

Perimeter, Area and Volume

- Perimeter of Any Polygon: add all side lengths
- Area of a Rectangle: $A = lw$
- Area of Parallelogram: $A = bh$
- Area of Triangle: $A = \frac{1}{2}bh$
- Area of Trapezoid: $A = \frac{1}{2}h(b_1 + b_2)$
- Volume of Rectangular Prism: $V = lwh$

ex: Find the perimeter & area:



Perimeter: $P = 5 + 8 + 5 + 14 =$ 32 mm

Area: This is a trapezoid, so use the area of a trapezoid formula: $A = \frac{1}{2}h(b_1 + b_2)$

The bases are the sides that are parallel, and the height is perpendicular to the bases.

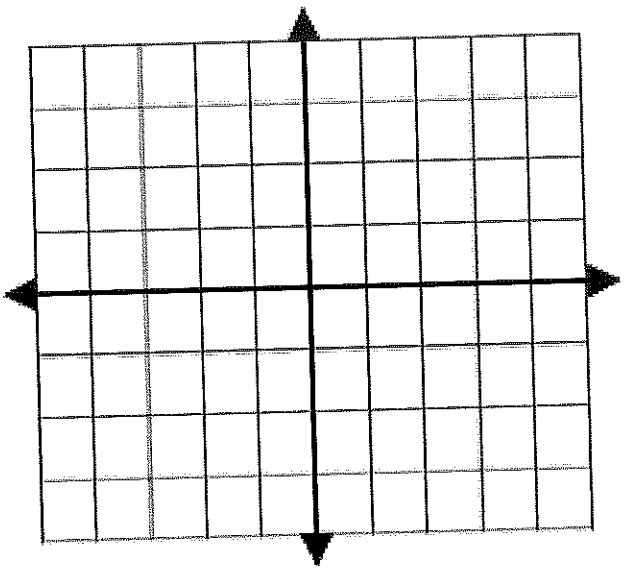
→ $A = \frac{1}{2}(4)(8+14) =$ $44\ mm^2$

Compare the integers with <, >, or =.

45. $-4 \bigcirc -5$	46. $2 \bigcirc -2$	47. $\lvert-5\rvert \bigcirc \lvert5\rvert$	48. $-7 \bigcirc 6$	49. $-13 \bigcirc -9$
50. $\lvert-7\rvert \bigcirc -6$	51. $-17 \bigcirc -14$	52. $\lvert-3\rvert \bigcirc \lvert-2\rvert$	53. $0 \bigcirc -6$	54. $\lvert-4\rvert \bigcirc \lvert6\rvert$

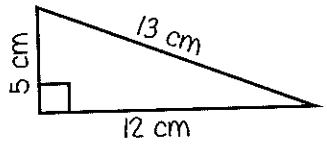
Graph and label each of the ordered pairs in the coordinate plane. Then state the quadrant or axis in/on which the point is located.

55. A(2, 4)	56. B(0, -3)
57. C(1, -1)	58. D(3, 3)
59. E(-4, 1)	60. F(2, 0)
61. G(-3, -2)	62. H(-2, 3)
63. I(0, 2)	64. J(-1, -4)

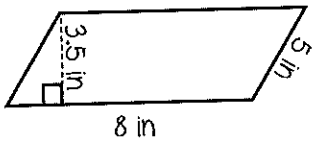


Find the perimeter, area, and/or volume of the given figure.

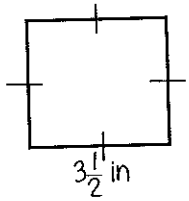
65. Find the perimeter & area:



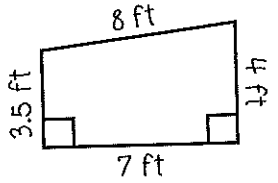
66. Find the perimeter & area:



67. Find the perimeter & area:

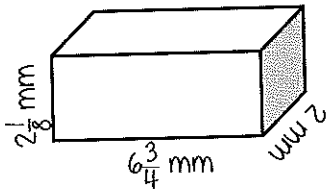


68. Find the perimeter & area:



69. Find the area of a square with a perimeter of 45 cm

70. Find the volume:



Evaluating Algebraic Expressions

1. Substitute the given numbers for the variables
2. Evaluate the expression using the order of operations

ex: evaluate $x + 4y$ for $x = 4$ & $y = 6$

$4 + 4(6)$

$4 + 24 = \boxed{28}$

One-Step Addition & Subtraction Equations

- Addition Equations: Subtract the number being added to the variable from both sides of the equation

ex: $4 + x = 18$

$-4 \quad -4$

$\boxed{x = 14}$

- Subtraction Equations: Add the number being subtracted from the variable to both sides of the equation

ex: $20 = a - 5$

$+5 \quad +5$

$25 = a \rightarrow \boxed{a = 25}$

One-Step Multiplication & Division Equations

- Multiplication Equations: Divide both sides of the equation by the number next to the variable

ex: $\frac{7b}{7} = \frac{28}{7}$

$\boxed{b = 4}$

- Division Equations: Multiply both sides of the equation by the number under the variable

ex: $5 \cdot \frac{n}{5} = 10 \cdot 5$

$\boxed{n = 50}$

Problem Solving

1. Read the problem. Identify the question that is being asked and the key information in the problem.
2. Plan how you are going to solve the problem and estimate the answer.
3. Solve the problem using the strategy of your choice.
4. Check your answer. Make sure your answer is reasonable and compare it to your estimate. Label your answer with appropriate units.

Evaluate each expression for $a = 5$, $b = 12$, $c = 10$, & $d = 2$.

71. $2b - a$	72. $d(ab - c)$	73. $3 + \frac{b}{d}$
74. $\frac{4a}{b + 4d}$	75. $2a^2 - c$	76. $b - c + d$

Solve each one-step equation.

77. $g + 3 = 17$	78. $r - 6 = 7$	79. $6b = 18$	80. $\frac{h}{9} = 3$
81. $5 = f - 8$	82. $48 = 12b$	83. $a + 24 = 83$	84. $17 + x = 23$
85. $10 = \frac{m}{5}$	86. $86.5 = f - 7.63$	87. $\frac{n}{6} = 11$	88. $\frac{3}{4}h = 12$

Solve each word problem using the method of your choice.

89. A fencing company charges $22 per foot to install a wood fence. How much will it cost to install a wood fence around a rectangular pool area that is 20 feet wide and 38 feet long?

90. A 6 inch-tall plant grew ¾ of an inch one week and twice as much the following week. How tall is the plant now?

91. Jack can read 45 pages of his book in one and a half hours. At that rate, how long will it take him to read the entire 300-page book?

92. Brian ordered 3 large cheese pizzas and a salad. The salad cost $4.95. If he spent a total of $47.60 including the $5 tip, how much did each pizza cost? (Assume there is no tax).

93. A cookie recipe calls for $3\frac{1}{4}$ cups of flour. The recipe makes 3 dozen cookies. How much four is needed to make 144 cookies?

94. Ella has a box of chocolate candies. She gives $\frac{1}{3}$ of the candies to her sister, 4 to her brother, and she eats the remaining 12 candies. How many chocolate candies were in the box originally?

Solve each word problem using the method of your choice.

95. 20% of the 520 students in Wendover Middle School were involved in school sports. Of those students, 12.5% were on the wrestling team. How many students were on the wrestling team?

96. A piggy bank contains some dimes and nickels. There are 8 more dimes than nickels in the bank. There is a total of $1.40. How many of each type of coin are in the bank?

97. An elevator in a tall building goes up 7 floors, then down 9 floors, down 4 floors, up 8 floors, and down 2 floors. Now it is on floor 14. On what floor did the elevator start?

98. Jenna danced for 3 hours on Sunday, 2 hours on Monday and Tuesday, 1 hour on Thursday, 1.5 hours on Friday, and 2 hours on Saturday. She did not dance at all on Wednesday. What is the average number of hours she danced each day? Round your answer to the nearest tenth of an hour.

99. Jackie makes $15.25/hour babysitting. George makes $18.50/hour mowing the lawn. If Jackie babysits for 4 hours and George mows lawns for 3 hours, who makes more money? How much more does he/she make?

100. A box of 8 crayons costs $0.96. How much does each crayon cost? At that unit price, how much would a box of 30 crayons cost?

7th grade Math

Name _____ Date _____ Class _____

End-of-Course Test

Select the best answer.

1. Average yearly heat and electric costs are listed in the table. Which choice lists the countries in order by cost from least to greatest?

Country	Average Cost
Argentina	$2137
Brazil	$2702
India	$2360
U.S.	$2376

A India, U.S., Argentina, Brazil

B Argentina, Brazil, India, U.S.

C U.S., India, Argentina, Brazil

D Argentina, India, U.S., Brazil

2. What is the GCF of 45, 90, and 150?

F 3 H 6

G 5 J 15

3. Find the quotient: 2,263 ÷ 26

A 2,237 C $26\frac{1}{87}$

B $87\frac{1}{26}$ D 2,289

4. What is the mean?

5 4 2 8 6 11 3 7 12

F 5.9 H 6.4

G 6.0 J 7.3

5. A t-shirt requires $\frac{3}{4}$ of a yard of material. How many t-shirts can be made from 18 yards of material?

A 6 C 24

B 13 D 36

6. Express $\frac{3}{8}$ as a decimal.

F 0.125 H 0.375

G 0.3 J 0.425

7. What is $3\frac{7}{20}$ as an improper fraction?

A $\frac{60}{20}$ C $\frac{143}{20}$

B $\frac{67}{20}$ D $\frac{60}{7}$

8. Find the least common multiple of 6, 10, and 12.

F 2 H 60

G 12 J 120

9. What is $|-13|$?

A −13 C 1

B 0 D 13

End-of-Course Test

10. Your favorite store is having a sale. You would like to buy a new CD and 6 videotapes. What is the best estimate for the cost of a CD and 6 videotapes?

Miko's Electronics Plus	
CDs	$14.95
VCR	$129.95
Videotapes	6 for $8.29
Phone	$42.95

F $20 H $25

G $23 J $32

11. 14 is what percent of 56?

A 10% C 20%

B 15% D 25%

12. Which is a solution to $x - 9 = 16$?

F $x = 10$ H $x = 25$

G $x = 12$ J $x = 7$

13. Which expression shows how the distributive property can be used to multiply 8×29?

A $8(20) + 8(9)$ C $29(8)$

B $8 + 20 \cdot 8 + 9$ D $8(20) + 9$

14. Seven out of 12 people say they will vote for Mrs. Meekus. If 5,592 people vote, how many are likely to vote for Mrs. Meekus?

F 2,121 H 4,868

G 3,262 J 9,586

15. Solve the equation. Choose the answer in simplest form. $4x = \frac{8}{7}$

A $\frac{1}{28}$ C $\frac{2}{7}$

B $\frac{1}{7}$ D $\frac{7}{2}$

16. What is the area of a rectangle with width 6 meters and length 3 meters?

F $6\ m^2$ H $18\ m^2$

G $12\ m^2$ J $36\ m^2$

17. Which gives 1600 m in km?

A 16,000 km C 16 km

B 1600 km D 1.6 km

Name _____ Date _____ Class _____

End-of-Course Test

18. Which gives the missing value in $\frac{2}{5} = \frac{x}{30}$?

F 5 H 12

G 6 J 15

19. Use the data in the table to write an equation for the function.

A $y = 2x - 1$

B $y = 3x + 4$

C $y = 6x - 2$

D $y = 5x + 3$

x	y
–2	–2
2	10
4	16

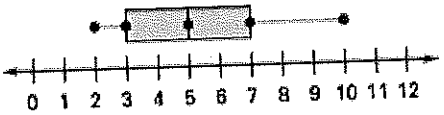
Use this data set for 20 and 21.
0, 4, 5, 9, 2, 7, 6

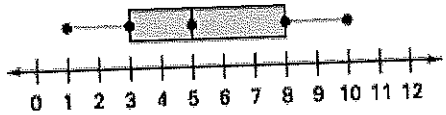
20. Find the interquartile range.

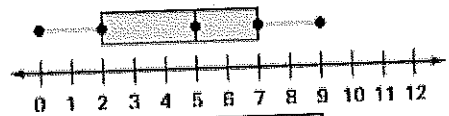
F 4 H 6

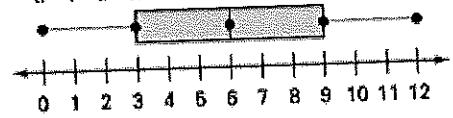
G 5 J 9

21. Which is the correct box-and-whisker plot for the data set?

A


B


C


D


22. Which equation best represents the function described below?
"The school has three times as many male teachers as female teachers."

F $3m = f$

G $m = f + 3$

H $m = 3f$

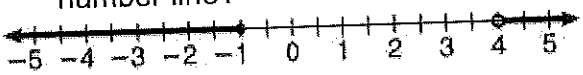
J $m = \frac{f}{3}$

23. Evaluate $3x - 9$ for $x = 8$.

A 12 C 29

B 15 D 33

24. What inequality is shown on the number line?



F $-1 \geq x \geq 4$

G $x \leq 3$ or $x > 4$

H $-1 \leq x < 4$

J $-1 \leq x \leq 4$

25. A used car loan of $2,262.24 is to be paid off in 18 equal monthly payments. How much is each payment?

A $100.24 C $120.24

B $118.52 D $125.68

26. Regina received a score of 39 out of 52 on a quiz. What percent did she earn?

F 39% H 82%

G 75% J 133%

27. Solve $7y = 63$.

A $y = 8$ C $y = 56$

B $y = 9$ D $y = 441$

End-of-Course Test

28. Simplify 5^4.

F 20 H 625

G 45 J 715

29. Simplify $4 \cdot 5 - 2 \cdot 6 + 4$.

A 12 C 36

B 18 D 72

30. In what quadrant is the point (3, –4) located?

F I H III

G II J IV

31. Which shows an expression for "the sum of 3 times a number and 5"?

A $3x + 5$ C $5 + x$

B $5x + 3$ D $2x + 5$

32. A watch cost $75.99. If the sales tax rate is 6.25%, what is the amount of sales tax?

F $0.48 H $4.75

G $2.19 J $474.94

33. Doug counts the number of boys and girls in his math class and makes a frequency table. How many boys are in his class?

Student	Boy	Girl
Frequency	12	13

A 13 C 10

B 12 D 2

8th grade math

Name _____ Date _____ Class _____

End of Course Test

Choose the best answer.

For 1–2, use the data set.

Stem	Leaves
2	0 8 9 9
3	1 2 6
4	1 2

1. What is the mean of the data set?

   A 22 C 31

   B 29 D 32

2. What is the median of the data set?

   F 22 H 31

   G 29 J 32

3. Subtract $\frac{3}{4} - \frac{2}{3}$.

   A 12 C $\frac{1}{12}$

   B $\frac{5}{12}$ D $\frac{1}{2}$

4. Solve $x - \frac{3}{4} = 1\frac{1}{8}$.

   F $\frac{7}{8}$ H $1\frac{5}{8}$

   G $\frac{5}{8}$ J $1\frac{7}{8}$

5. Which expression is equivalent to "12 less than the product of 4 and a number"?

   A $4n - 12$ C $12n - 4$

   B $12n + 4$ D $\frac{n - 12}{4}$

6. Evaluate $2 + 6[(4 + 4) \div 2]$.

   F 48 H 32

   G 38 J 26

7. Solve $5z = 105$.

   A $z = 21$ C $z = 105$

   B $z = 100$ D $z = 525$

8. Find the difference $-6 - (-3)$.

   F -9 H 3

   G -3 J 9

9. Solve $\frac{k}{-8} = -6$.

   A $k = -48$ C $k = 2$

   B $k = -14$ D $k = 48$

10. Convert $\frac{45}{20}$ to a decimal.

    F 2.25 H 0.25

    G $2\frac{1}{4}$ J 0.44

11. Find the product $-3.5 \cdot 1.4$.

    A -4.9 C -0.49

    B 0.49 D 4.9

12. Solve $7.2h = 57.6$.

    F $h = 0.8$ H $h = 50.4$

    G $h = 8$ J $h = 80$

13. Find the quotient $3\frac{6}{7} \div \frac{5}{21}$.

    A $\frac{5}{81}$ C $1\frac{4}{45}$

    B $\frac{45}{49}$ D $16\frac{1}{5}$

Name _____ Date _____ Class _____

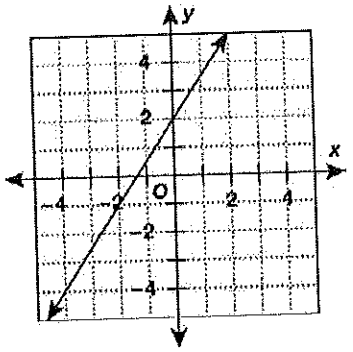
End of Course Test

14. Solve $x - 6\frac{1}{2} = 3\frac{2}{3}$.

F $x = 10\frac{1}{6}$ H $x = 9\frac{1}{6}$

G $x = 9\frac{3}{5}$ J $x = -3\frac{1}{6}$

15. What is the slope of the line?



A $\frac{2}{3}$ C $-\frac{2}{3}$

B $\frac{3}{2}$ D $-\frac{3}{2}$

16. What are the coordinates of the point that is 2 units right and 1 units down from the origin?

F $(2, 1)$ H $(2, -1)$

G $(-2, 1)$ J $(-1, 2)$

17. Use cross products to solve the proportion $\frac{5}{m} = \frac{15}{9}$.

A $m = 1$ C $m = 8\frac{1}{3}$

B $m = 3$ D $m = 27$

18. Simplify $2x^2 - 6x^2 + 3x^2 + 7$

F $-11x^2 + 7$ H $x^2 + 7$

G $11x^2 + 7$ J $-x^2 + 7$

19. A scale model of a building is 5 inches wide by 7 inches long. If the scale is 1 in.:15 ft, how long is the building?

A 35 ft C 105 ft

B 75 ft D 180 ft

20. What is 85% written as a fraction?

F $\frac{17}{20}$ H 0.85

G $1\frac{3}{17}$ J $\frac{85}{1}$

21. About how much will a $459.95 LCD TV cost including the sales tax of 8.25%?

A $400 C $500

B $475 D $525

22. Find the percent of decrease if 110 is decreased to 88.

F –125% H –25%

G –80% J –20%

23. What is the simple interest rate if $p = \$4{,}000$, $t = 2$ years, and $I = \$320$?

A 2% C 8%

B 4% D 80%

24. What is the direct variation equation for the data in the table?

Cost (*y*)	7.50	10.00	12.50	15.00
Pound (*x*)	3	4	5	6

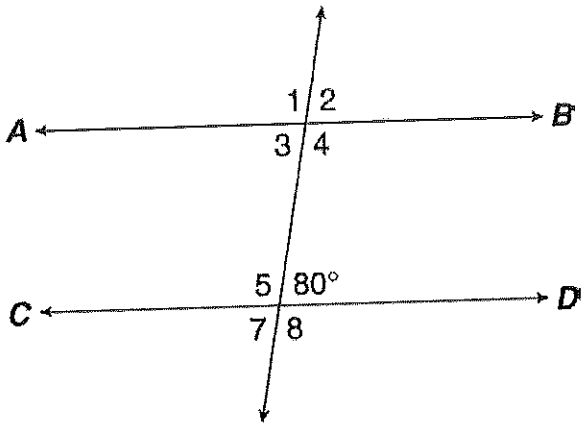
F $y = 2.5x$ H $y = -2.5x$

G $y = \frac{2}{5}x$ J $y = -\frac{2}{5}x$

Name _____ Date _____ Class _____

End of Course Test

Use the figure for 25-26. Line *AB* is parallel to line *CD*.



25. What is the measure of $\angle 2$?

A 180° C 80°

B 100° D 20°

26. What is the measure of $\angle 7$?

F 180° H 80°

G 100° J 20°

27. What is the measure of $\angle 5 + \angle 7$?

A 180° C 80°

B 100° D 20°

28. Two angles of a triangle measure 20° and 60°. What is the measure of the third angle of the triangle?

F 50° H 90°

G 80° J 100°

29. Find the area of a triangle with base 10 centimeters and height 8.5 centimeters.

A 85 cm^2 C 37 cm^2

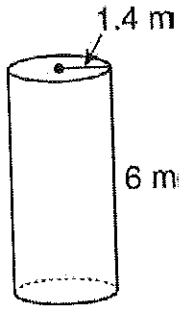
B 42.5 cm^2 D 18.5 cm^2

30. What is the slope of the line that passes through (–2, 4) and (–1, 2)?

F $-\frac{1}{2}$ H 2

G –2 J –1

31. Find the volume of the cylinder to the nearest tenth. Use 3.14 for π.



A 12.3 m^3

B 26.4 m^3

C 36.9 m^3

D 158.3 m^3

32. Jose worked 28 hours and earned $418.24. What did he earn per hour?

F $5.10 H $11.70

G $7.47 J $14.94

33. What is the surface area of a cylinder having a base radius of 4 inches and a height of 5 inches? Use 3.14 for π.

A 56.52 in^2

B 113.04 in^2

C 175.84 in^2

D 226.08 in^2

34. Helen has four jogging outfits and three pairs of shoes. How many different outfits can she make?

F 1 outfit H 10 outfits

G 7 outfits J 12 outfits

Name _____ Date _____ Class _____

End of Course Test

35. In how many different ways can a committee of 4 students be chosen from 6 students?

A 120 ways C 15 ways

B 30 ways D 1 way

36. Kia's experimental probability of striking out at baseball is 13%. Out of 30 times at bat, about how many times will she strike out?

F 4 H 12

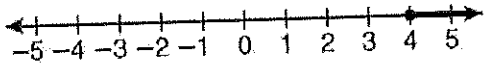
G 9 J 18

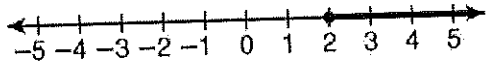
37. Solve $4w = 2w - 12$.

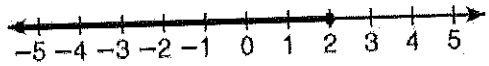
A $w = -6$ C $w = 2$

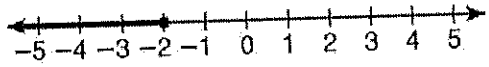
B $w = -2$ D $w = 6$

38. Which is the graph of the solution set of $n - 3 \geq -1$.

F 

G 

H 

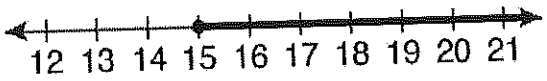
J 

39. Solve $-2n + 5 > 7$.

A $n > 1$ C $n > -1$

B $n < 1$ D $n < -1$

40. Which inequality has the following graphed solution?



F $45 > 3y$ H $3y < 45$

G $3y \leq 45$ J $45 \leq 3y$

Pre-Algebra

PRE-ALGEBRA

Name _____ Date _____

End-of-Course Test

For use after Chapter 12

Evaluate the expression when $x = 3$, $y = 5$, and $z = 6$.

1. $3x - y$ **2.** $(y + z)^2 - x$ **3.** $\frac{2z - x}{3}$

Find the sum, difference, product, or quotient.

4. $42 + (-19)$ **5.** $-28 - 41$ **6.** $-16 - (-35)$

7. $14(-6)$ **8.** $\frac{-36}{-4}$ **9.** $\frac{296}{-8}$

State the absolute value and the opposite of the number.

10. -25 **11.** 9 **12.** 87 **13.** -33

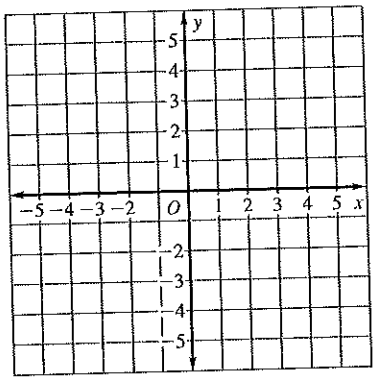
Plot the point in the coordinate plane. Describe the location of the point.

14. $A(-2, 3)$

15. $B(1, 3)$

16. $C(-4, -3)$

17. $D(3, -1)$



Identify the property that the statement illustrates.

18. $c + 0 = c$ **19.** $f(gh) = (fg)h$ **20.** $x + y = y + x$

Evaluate the expression using the distributive property and mental math.

21. $5(34)$ **22.** $3(84)$ **23.** $8(7.3)$ **24.** $9(6.2)$

Simplify the expression.

25. $26 + 3x - 19 + 24x$

26. $-6(3t - 2) + 28$

27. $7b + 4b + 17b$

Write the verbal sentence as an equation. Then tell whether 7 is a solution of the equation.

28. The difference of 14 and y is 21.

29. The product of z and -6 is -42.

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. See left.
15. See left.
16. See left.
17. See left.
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____
29. _____

PRE-ALGEBRA

Continued

Name _____ Date _____

End-of-Course Test

For use after Chapter 12

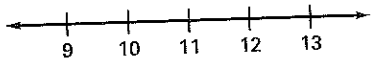
Solve the equation.

30. $8n = -104$ **31.** $h - 41 = -6$ **32.** $-\frac{t}{5} = 15$

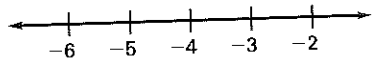
33. $-3p - 7 = 5$ **34.** $4(3 - 2x) = -44$ **35.** $-8 = 8(4g + 3)$

Solve the inequality. Graph your solution.

36. $x - 6 \geq 5$



37. $-4b - 3 \leq 13$



Find the greatest common factor of the monomials.

38. $6x, 9x$ **39.** $5t, 15t^2$ **40.** $7x^3z^4, 34x^5z^2$

Find the least common multiple of the monomials.

41. $8t, 24t$ **42.** $6x, 12x^3$ **43.** $24r^3s^2, 15r^2s^6$

Find the product or quotient. Write your answer using only positive exponents.

44. $u^4 \cdot u^9$ **45.** $x^3 \cdot x^{-4}$ **46.** $\frac{p^7}{p^2}$ **47.** $\frac{t^{-6}}{t^3}$

Find the sum, difference, product, or quotient.

48. $\frac{5}{7} + \left(-\frac{6}{7}\right)$ **49.** $5\frac{3}{4} - 2\frac{2}{3}$

50. $-1\frac{1}{5} \cdot \left(6\frac{1}{2}\right)$ **51.** $-8\frac{1}{3} \div \left(-4\frac{1}{6}\right)$

Solve the equation or inequality by first clearing the fractions or the decimals.

52. $\frac{1}{3}x - 4 < \frac{5}{6}$ **53.** $-\frac{3}{8}x + \frac{1}{4} \geq \frac{7}{12}$

54. $4.2x + 3.5 = 16.1$ **55.** $8.5x - 6.97 = 38.08$

Solve the proportion.

56. $\frac{7}{12} = \frac{49}{w}$ **57.** $\frac{96}{b} = \frac{48}{51}$ **58.** $\frac{9.2}{x} = \frac{2.3}{16}$

Answers

30. _____

31. _____

32. _____

33. _____

34. _____

35. _____

36. _____
See left.

37. _____
See left.

38. _____

39. _____

40. _____

41. _____

42. _____

43. _____

44. _____

45. _____

46. _____

47. _____

48. _____

49. _____

50. _____

51. _____

52. _____

53. _____

54. _____

55. _____

56. _____

57. _____

58. _____

PRE-ALGEBRA

Continued

Name _____ Date _____

End-of-Course Test

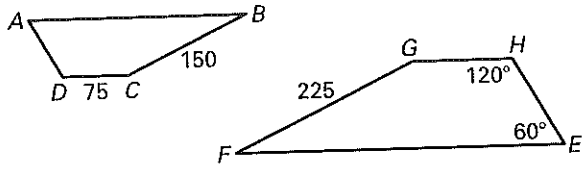
For use after Chapter 12

Given *ABCD* ~ *EFGH*, find the indicated measure.

59. $m\angle A$

60. $m\angle D$

61. GH



62. Each letter in the word VACATION is written on a separate slip of paper and placed in a hat. A letter is chosen at random from the hat. What is the probability that the chosen letter is a vowel?

Use a proportion or a percent equation to answer the question.

63. What percent of 360 is 126?

64. 18.75 is 12.5% of what number?

Identify the percent change as an *increase* or a *decrease*. Then find the percent of change.

65. Original: 24
New: 36

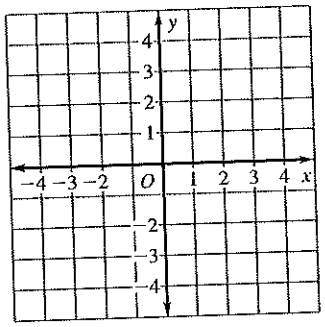
66. Original: 80
New: 60

67. Original: 64
New: 112

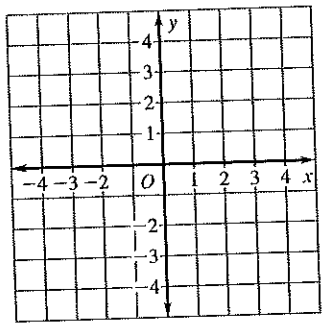
68. A spring sweater is on sale for 15% off the original price of $35. What is the sale price of the sweater?

Graph the equation. Then tell whether the equation is a function.

69. $x = -3$



70. $y = -3x + 2$



Write an equation of a line through the given points.

71. (5, 10), (0, −5)

72. (−1, 10), (0, 3)

73. (0, 2), (−12, −2)

74. (0, −9), (4, −14)

Answers

59. _____

60. _____

61. _____

62. _____

63. _____

64. _____

65. _____

_____

66. _____

_____

67. _____

_____

68. _____

69. See left.

_____

70. See left.

_____

71. _____

72. _____

73. _____

74. _____

PRE-ALGEBRA

Continued

Name _____ Date _____

End-of-Course Test

For use after Chapter 12

Let $f(x) = 5x + 4$ and $g(x) = -2x + 1$. Find the indicated value.

75. $f(-2)$

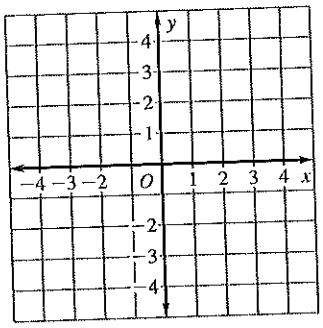
76. $g(4)$

77. $f(6) + g(-8)$

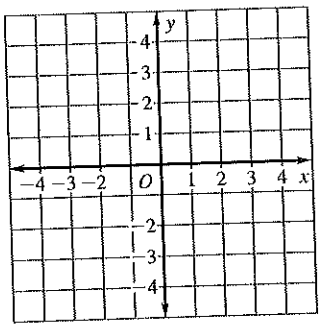
78. x when $g(x) = 5$

Graph the inequality in a coordinate plane.

79. $y > -1$



80. $y \leq -x - 2$



Simplify the expression.

81. $\sqrt{72}$

82. $\sqrt{\frac{18}{49}}$

83. $\sqrt{50b^2}$

84. $\sqrt{\frac{9r^2}{121}}$

Determine whether the triangle with the given side lengths is a right triangle.

85. 9, 12, 15

86. 5, 12, 16

87. 9, 40, 41

88. 5, 6, 7

Find the midpoint of the segment with the given endpoints. Then find the distance between the points. Write your answer in simplest form.

89. (4, 5), (0, 7)

90. (3, 6), (−4, −2)

91. (0, −8), (2, 6)

92. The shortest leg of a 30°-60°-90° triangle has a length of 6. Find the length of the other leg and the hypotenuse. Write your answer in simplest form.

The angle measures of a polygon are given. Find the value of x.

93. Quadrilateral: $x°$, $2x°$, $4x°$, $5x°$

94. Triangle: $2x°$, $5x°$, $(x + 20)°$

Find the area of the figure with the given dimensions. Use 3.14 for π. Round to the nearest whole number.

95. Parallelogram: $h = 6$ m, $b = 4.5$ m

96. Circle: $r = 19$ yd

Answers

75. _____

76. _____

77. _____

78. _____

79. See left.

80. See left.

81. _____

82. _____

83. _____

84. _____

85. _____

86. _____

87. _____

88. _____

89. _____

_____

90. _____

_____

91. _____

_____

92. _____

_____

93. _____

94. _____

95. _____

96. _____

PRE-ALGEBRA

Continued

Name _____ Date _____

End-of-Course Test

For use after Chapter 12

Find the surface area and the volume of the solid with the given dimensions. Use 3.14 for π. Round to the nearest whole number.

97. Cylinder: $r = 11$ in., $h = 15$ in.

98. Cone: $r = 7$ cm, $h = 12$ cm

99. Make an ordered stem-and-leaf plot and a box-and-whisker plot of the data: 56, 59, 65, 45, 68, 41, 66, 49, 51, 52.

Answers

97. _____

_____

98. _____

_____

99. See left.

100. _____

101. _____

102. _____

103. _____

104. _____

105. _____

Evaluate.

100. ${}_5P_4$ **101.** ${}_8C_2$ **102.** ${}_7C_0$ **103.** $4!$

104. A computer randomly generates a whole number from 1 to 25. Find the probability that the computer generates a multiple of 5.

105. A jar has 6 red marbles and 4 blue marbles. You randomly choose two marbles. Find the probability that both marbles are red.

PRE-ALGEBRA

Continued

Name _____ Date _____

End-of-Course Test

For use after Chapter 12

Tell whether the angles are *complementary*, *supplementary*, or *neither*.

106. $m\angle 1 = 62°, m\angle 2 = 118°$

107. $m\angle 3 = 27°, m\angle 4 = 63°$

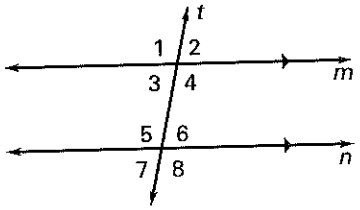
Tell whether the angles in the diagram are *vertical*, *corresponding*, *alternate interior*, or *alternate exterior* angles.

108. $\angle 1$ and $\angle 5$

109. $\angle 5$ and $\angle 8$

110. $\angle 2$ and $\angle 7$

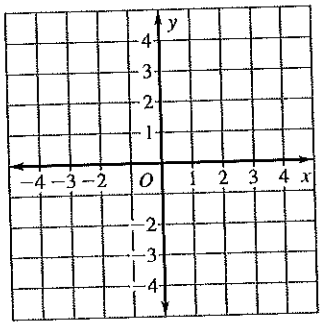
111. $\angle 3$ and $\angle 6$



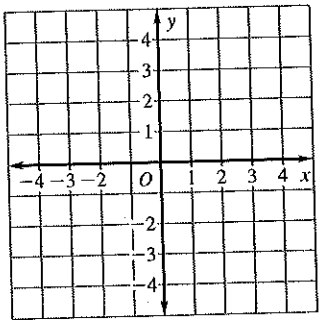
112. Find the measure of an exterior angle of a regular 18-gon.

Draw $\triangle ABC$ with vertices $A(-4, 1)$, $B(-2, 4)$, and $C(0, -1)$. Predict where in the coordinate plane its image will lie after the specified translation. Then find the coordinates of the vertices and draw the image.

113. $(x, y) \rightarrow (x + 4, y - 3)$



114. Reflection in the y-axis



Answers

106. _____

107. _____

108. _____

109. _____

110. _____

111. _____

112. _____

113. _____

_____

_____

See left.

114. _____

_____

_____

See left.

SUMMER ELL 2022

We made it! It was a crazy year of fun and learning. Each student has a Summer packet to work on. If you need me this Summer I am available through the school email and my cell #. I have left the Google Classrooms OPEN for the Summer. Please check them for learning links, virtual field trips, this year's photo collage and fun!

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973-557-0094

Read, have Fun and see you in September!

Ms. S.