

SUMMER MATH PRACTICE

for students entering Math 7



Benton Middle School

7411 Hoadly Road

Manassas, VA 20112

NAME: _____

DATE: _____

CLASS: _____

6.NS.1

I can express equivalency, compare, and order fractions, decimals, and percents.

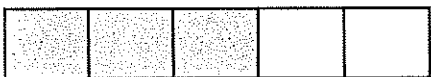


KEY TERMS & CONCEPTS

- A _____, _____, and _____ can all represent the same value.
- To convert between fractions and decimals, use _____ or _____.
- To convert between decimals and percents, move the decimal _____ places to the right or left.
- To convert between fractions and percents, first convert the value to a _____.

EXAMPLES

What percent of the model is shaded?

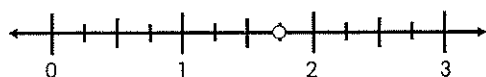


- a. 30%
- b. 33%
- c. 60%
- d. 55%

Compare: $0.40 \square 4\%$

- a. $>$
- b. $<$
- c. $=$

What percent is represented by the dot?



- a. 13%
- b. 7%
- c. 130%
- d. 175%

Compare: $\frac{9}{5} \square 1\frac{7}{8}$

- a. $>$
- b. $<$
- c. $=$

Order these rational numbers from least to greatest: $\frac{1}{5}$, $\frac{1}{4}$, 0.02, 50%

- a. 0.02, $\frac{1}{4}$, $\frac{1}{5}$, 50%
- b. 0.02, $\frac{1}{5}$, $\frac{1}{4}$, 50%
- c. 50%, $\frac{1}{5}$, 0.02, $\frac{1}{4}$
- d. $\frac{1}{4}$, 0.02, $\frac{1}{5}$, 50%

What is 125% as a fraction? Simplify if needed.

- a. $\frac{125}{100}$
- b. $\frac{125}{10}$
- c. $\frac{5}{4}$
- d. $\frac{1}{4}$

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6.NS.2

I can represent integers, compare/order integers, and find absolute value.

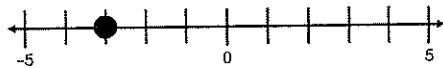


KEY TERMS & CONCEPTS

- Some ways to represent integers are _____ and a _____.
- Integers can be compared using _____, _____, or _____. Integers can also be listed in _____ from least to greatest or greatest to least.
- Absolute value describes the _____ from zero. It is always _____.

EXAMPLES

What integer is represented on the number line?



- a. -1
- b. -7
- c. -3
- d. -2

What integer is represented in the picture?



- a. 3
- b. -7
- c. -3
- d. 7

Compare: $-42 \square -51$

- a. $>$
- b. $<$
- c. $=$

Order from greatest to least:

$-31, 0, 3, -2, -5$

- a. $-31, -5, -2, 0, 3$
- b. $-31, -5, 3, -2, 0$
- c. $3, 0, -31, -5, -2$
- d. $3, 0, -2, -5, -31$

True or False?

$|-12|$ is the same as $-|-12|$.

- a. True
- b. False

What integer would represent a loss of 10 yards?

- a. 10
- b. -5
- c. -10
- d. 1

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6.CE.1

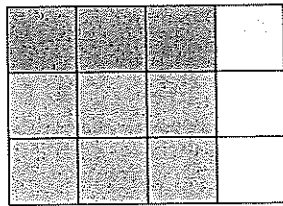
I can estimate, demonstrate, solve, and justify solutions to problems using fraction operations. .

**KEY TERMS & CONCEPTS**

- To multiply fractions, _____ the numerators, then _____ the denominators.
- To divide fractions, _____ the first fraction, _____ the operator to multiplication, _____ the second fraction, the follow _____ rules.
- Convert all values to _____ fractions before multiplying. _____ answers.
- For adding and subtracting fractions, get a _____ denominator.

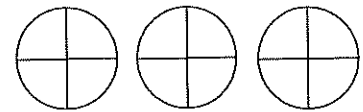
EXAMPLES

What equation is represented by this model?



- a. $\frac{1}{4} \times \frac{1}{5} = \frac{1}{20}$
 b. $\frac{3}{4} \times \frac{1}{3} = \frac{1}{4}$
 c. $\frac{3}{12} \times \frac{6}{12} = \frac{2}{12}$
 d. $\frac{1}{4} \times \frac{3}{3} = \frac{3}{12}$

How many $\frac{1}{4}$ are in 3?



- a. 12
 b. $\frac{3}{4}$
 c. 4
 d. $\frac{12}{3}$

What is the product of $\frac{1}{8}$ and $\frac{2}{3}$ in simplest form?

- a. $\frac{2}{16}$
 b. $\frac{3}{16}$
 c. $\frac{24}{2}$
 d. $\frac{1}{12}$

$1\frac{1}{4} \div 3 = \underline{\hspace{2cm}}$

- a. $3\frac{1}{4}$
 b. $\frac{5}{12}$
 c. $\frac{15}{4}$
 d. $\frac{12}{5}$

Mom made a pan of brownies. On Saturday, the family ate half of the pan. On Sunday, the family ate a fourth of what was left. How much did the family eat on Sunday?

- a. 1 pan
 b. $\frac{1}{2}$ pan
 c. $\frac{1}{4}$ pan
 d. $\frac{1}{8}$ pan

Three friends are gathering blueberries. Gavin picks up $\frac{1}{4}$ cup. Rachel picks up $\frac{5}{8}$ cup. Isaiah picks up $\frac{1}{2}$ cup. What is the total amount of blueberries they gathered?

- a. $\frac{7}{8}$ cups
 b. $2\frac{3}{8}$ cup
 c. $\frac{7}{14}$ cups
 d. $1\frac{3}{8}$ cups

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6.CE.2

I can estimate, demonstrate, solve, and justify solutions to problems using integer operations. .

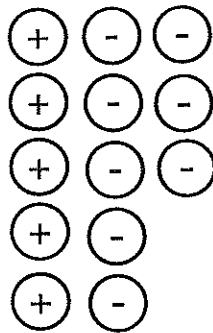


KEY TERMS & CONCEPTS

- Adding Integers: _____ signs means _____ and keep the sign. _____ signs means _____ and keep the sign of the greater absolute value.
- Subtracting Integers: Turn the problem into an equivalent addition problem using _____, _____, _____.
- Multiplying and Dividing Integers: If the problem has an _____ number of negatives, the answer is _____. If the problems has an _____ number of negatives, the answer is _____.

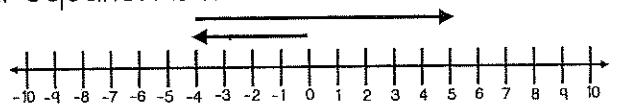
EXAMPLES

What is the sum?



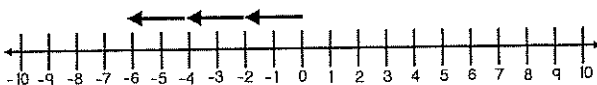
- a. -13
- b. -3
- c. -5
- d. 3

What equation is modeled on the number line?



- a. $-4 + 5 = 1$
- b. $-4 + 9 = 5$
- c. $5 - 4 = 1$
- d. $5 - 9 = -4$

What equation is modeled on the number line?



- a. $-6 - 3 = 0$
- b. $-2 \times -3 = -6$
- c. $-6 + 3 = 0$
- d. $-2 \times 3 = -6$

Solve: $\frac{-45}{9} = ?$

- a. -5
- b. -8
- c. 54
- d. -39

Solve: $-|3 - 9| = ?$

- a. -12
- b. -6
- c. 6
- d. 12

A bird is flying 130 feet above sea level. A diver is diving 75 feet below sea level. What is the difference in distance between the bird and the diver?

- a. 205 feet
- b. 55 feet
- c. -55 feet
- d. -205 feet

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6.NS.3

I can recognize and represent patterns with exponents and perfect squares.

**KEY TERMS & CONCEPTS**

- In exponential notation, the _____ is the number that is multiplied. The _____ is how many times the base is multiplied.

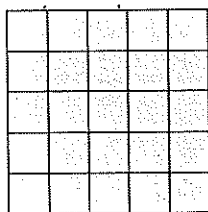
$$\begin{array}{c} \text{EXPONENT} \\ 5^3 \\ \text{BASE} \end{array}$$

$$5 \cdot 5 \cdot 5 = 125$$

- A _____ square is whole number whose square root is an integer. Ex: $4^2 = 16$

EXAMPLES

What is the perfect square represented by this model?



- a. 5^5
- b. 10^2
- c. 25^2
- d. 5^2

Represent 4^3 with multiplication.

- a. $4 \cdot 4 \cdot 4$
- b. $3 \cdot 3 \cdot 3 \cdot 3$
- c. $4 \cdot 3$
- d. 12

Using the pattern, what is the value of 10^0 ?

$$10^3 = 1,000$$

$$10^2 = 100$$

$$10^1 = 10$$

$$10^0 = ?$$

- a. 10
- b. 1
- c. 0
- d. -10

Which exponential form matches the expanded form $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$?

- a. 2^6
- b. 6^2
- c. 2^4
- d. 6^3

If $0^3 = 0 \cdot 0 \cdot 0$, what is the value of 0^3 ?

- a. 3
- b. 2
- c. 1
- d. 0

Which of these numbers is NOT a perfect square?

- a. 25
- b. 49
- c. 50
- d. 100

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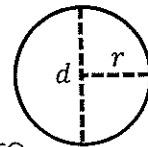
6.MG.1

I can identify the characteristics of circles and solve circumference and area problems.



KEY TERMS & CONCEPTS

- The value of _____ (π) is the ratio of a circle's _____ to its _____. The approximate value of π is _____.
- _____ is the distance around a circle.
- _____ is the number of square units that fit inside a closed figure

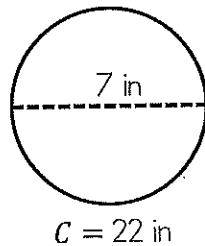


Formulas:
 $C = \pi d$
 $C = 2\pi r$
 $A = \pi r^2$

EXAMPLES

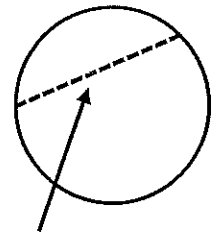
Which fraction can be used to approximate the value of pi(π)?

- a. $\frac{7}{22}$
- b. $\frac{22}{14}$
- c. $\frac{7}{3.14}$
- d. $\frac{22}{7}$



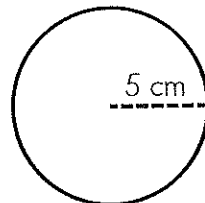
Which part of a circle is identified in the picture?

- a. circumference
- b. chord
- c. radius
- d. diameter



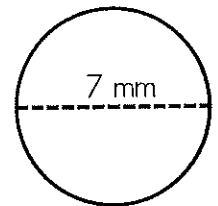
Find the circumference of the circle. Round the answer to the nearest tenth.

- a. 15.7 cm
- b. 31.4 cm
- c. 78.5 cm
- d. 314 cm



Find the area of the circle. Round the answer to the nearest hundredth.

- a. 38.46 mm²
- b. 38.47 mm²
- c. 153.86 mm²
- d. 153.87 mm²



Approximately how many diameters fit around the edge of a circle?

- a. 2.5
- b. 1.75
- c. 3.14
- d. 4.15

Courtney is making a circular rug for her room. She wants the diameter to be 4 feet. What is the least amount of material Courtney will need to make her rug?

- a. 12 square feet
- b. 13 square feet
- c. 50 square feet
- d. 51 square feet

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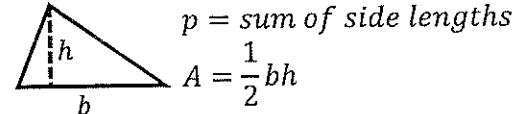
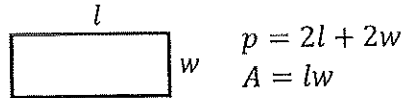
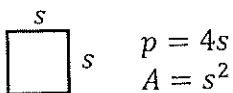
6.MG.2

I can solve area and perimeter of triangles and parallelograms.



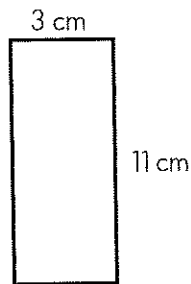
KEY TERMS & CONCEPTS

- _____ is the distance around a figure.
- _____ is the number of square units that fit inside a closed figure.



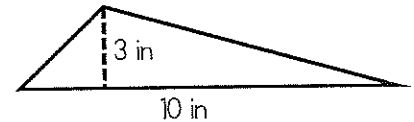
EXAMPLES

Find the perimeter.



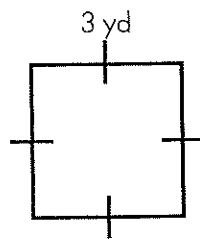
- a. 33 cm
- b. 33 cm squared
- c. 28 cm
- d. 28 cm squared

Find the area.



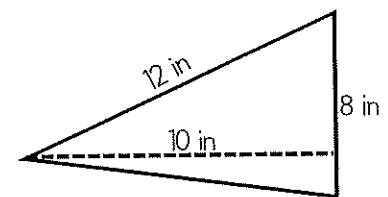
- a. 15 in
- b. 15 square inches
- c. 60 square inches
- d. 60 in

Find the distance around the figure.



- a. 9 yd
- b. 12 yd
- c. 9 yd²
- d. 12 yd²

How many square units are in the figure?



- a. 40
- b. 28
- c. 48
- d. 60

Josh is buying a cover for his swimming pool. The pool has a length of 55 feet and a width of 25 feet. How much material will Josh need for the swimming pool cover?

- a. 160 feet
- b. 160 feet²
- c. 1,375 feet
- d. 1,375 feet²

The apartment complex is adding a small triangular dog park for its residents. They need to make a fence for the park. If the dog park measures 9 yards by 12 yards by 15 yards, how much fencing is needed?

- a. 36 yards
- b. 36 yards squared
- c. 45 yards
- d. 45 yards squared

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6.MG.3

I can describe the characteristics of the coordinate plane and graph ordered pairs.



KEY TERMS & CONCEPTS

- The _____ is the system used to identify points. It formed by the intersection of the x-axis which is _____ and the y-axis which is _____. It has _____ quadrants.
- An _____ tells the location of the point. The first number shows the _____ coordinate, and the second number shows the _____ coordinate. The origin is located at (____, ____).

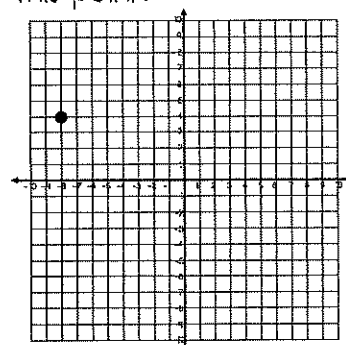
EXAMPLES

Which ordered pair is located on the x-axis?

- a. (-3, 5)
- b. (0, -3)
- c. (5, 0)
- d. (-5, -3)

What is the location of this point?

- a. Quadrant I
- b. Quadrant II
- c. Quadrant III
- d. Quadrant IV

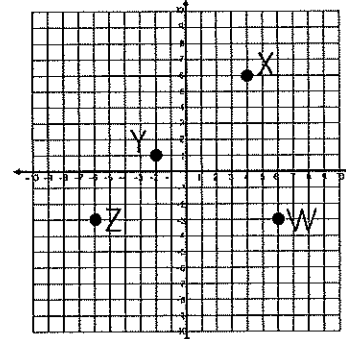


Which point is located in Quadrant III?

- a. (-3, 5)
- b. (0, -3)
- c. (5, 0)
- d. (-5, -3)

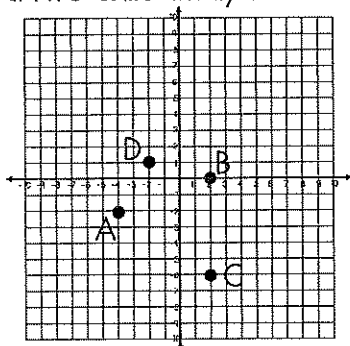
Identify the ordered pair of Point W.

- a. (6, -3)
- b. (-3, 6)
- c. (-6, -3)
- d. (3, -6)



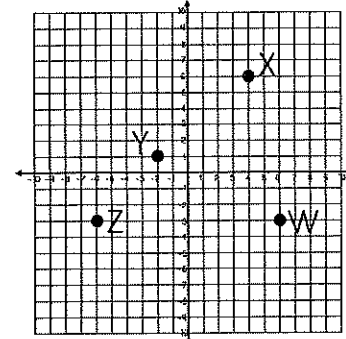
Identify the point located two units away from the x-axis.

- a. A
- b. B
- c. C
- d. D



If Y, Z, and W were connected to form a triangle, what is the Length of ZW?

- a. 0 units
- b. 6 units
- c. 12 units
- d. 14 units



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6.MG.4

I can determine congruence of segments, angles, and polygons.



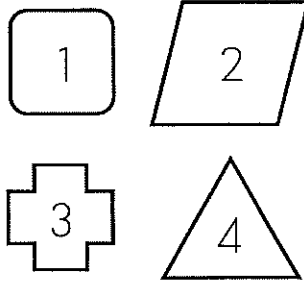
KEY TERMS & CONCEPTS

- A _____ is a closed figure made of three or more line segments.
- A _____ has congruent sides and congruent angles. The number of _____ is equal to the lines of _____ (divides the polygon into equal halves).
- _____ (\cong) means the same size and shape. _____ of segments, angles, and polygons can be used to determine congruence.

EXAMPLES

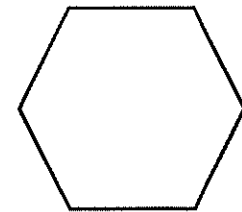
Which shape is a regular polygon?

- a. Shape 1
- b. Shape 2
- c. Shape 3
- d. Shape 4



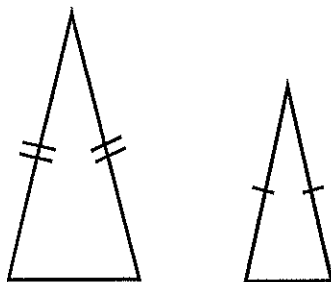
How many lines of symmetry does the following regular polygon have?

- a. 1
- b. 2
- c. 3
- d. 6



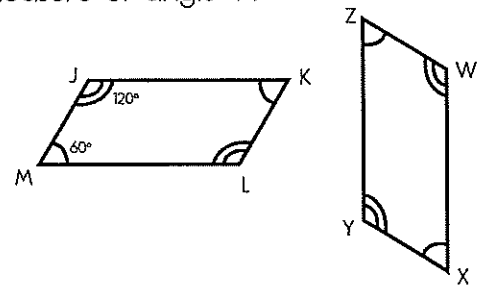
TRUE or FALSE? These two triangles are congruent.

- a. True
- b. False



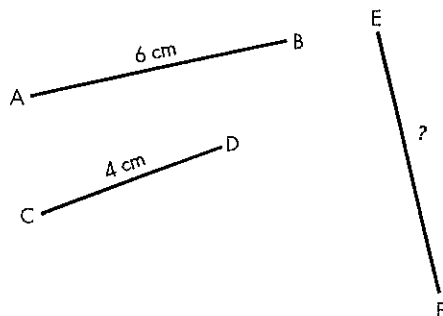
If Figure JKLM is congruent to Figures WXYZ, what is the measure of angle Y?

- a. 120°
- b. 60°
- c. 180°
- d. 40°



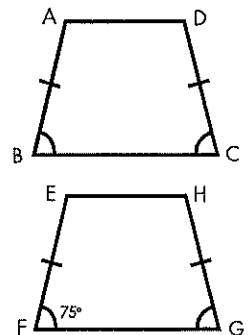
If \overline{AB} is congruent to \overline{EF} , what is the measure of \overline{EF} ?

- a. 4 cm
- b. 6 cm
- c. 2 cm
- d. 10 cm



The two polygons are congruent. What statement is NOT true?

- a. $\overline{AB} \cong \overline{EF}$
- b. $\overline{AB} \cong \overline{HG}$
- c. $\overline{BC} \cong \overline{EH}$
- d. $\angle B = 75^\circ$



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6.PS.1

I can represent data and analyze circle graphs.

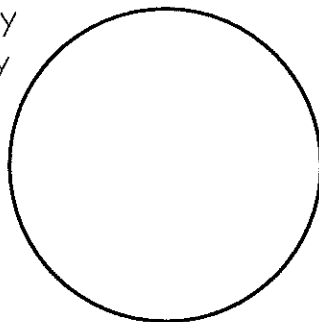


KEY TERMS & CONCEPTS

- Circle graphs display data to show the relationship of the _____ to the _____.
- The total percent in a circle graph is always _____.
- _____ can represent the same information as bar graphs, pictographs, and line plots.

EXAMPLES

Create a circle graph that displays 5 students that play soccer, 5 students that play baseball, 10 students that play basketball, and 20 students that play football.



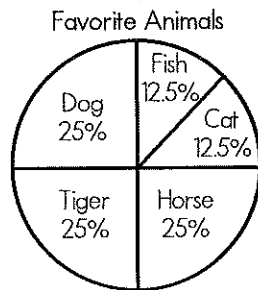
60 people were surveyed about the best ice cream flavor. How many people like strawberry the best?

- a. 10
- b. 15
- c. 25
- d. 30



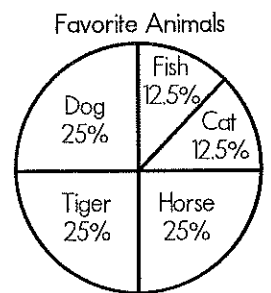
The class conducted a survey about favorite animals. Out of 160 students, how many students like dogs the best?

- a. 25
- b. 30
- c. 40
- d. 50



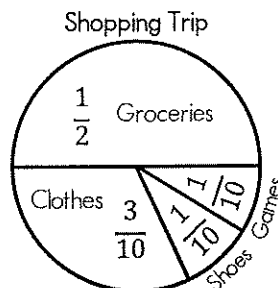
How many more students chose dog over cat as their favorite animals?

- a. 20
- b. 60
- c. 12.5
- d. 37.5



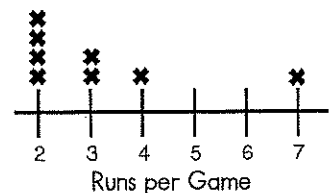
Marcus went shopping and spent \$200. How much did he spend on clothes?

- a. \$30
- b. \$40
- c. \$50
- d. \$60



Which circle graph best matches the line plot for number of runs scored per baseball game? ?

- a.
- b.
- c.



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6.PS.2

I can represent mean and determine effects on measures of center.

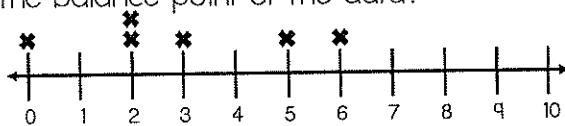


KEY TERMS & CONCEPTS

- _____: the average of the set of data. It is also called the _____.
- _____: the middle number in the set of data.
- _____: the number repeated the most in the set of data.
- _____: the highest number minus the smallest number.

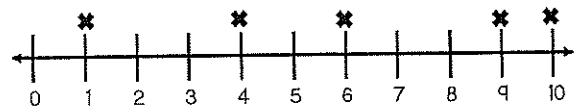
EXAMPLES

What is the balance point of the data?



- 2
- 3
- 4
- 5

What is the balance point of the data?



- 4
- 5
- 6
- 7

What is the mean?

87, 65, 93, 82, 82, 98, 43, 58

- 608
- 76
- 304
- 82

What happens to the median when the number 81 is added to the list of numbers?

2, 3, 5, 5, 14, 15

- The median increases.
- The median decreases.
- There is no change in the median.

Sammie practices the piano four days each week for the following minutes: 30, 45, 30, 60. What is the average time practiced if she practices five days one week for 30 minutes on the 5th day?

- 30 minutes
- 35 minutes
- 39 minutes
- 42 minutes

Max earned a 70, 70, 85, and 95 on his math tests. He was absent one day and had to make up the test, and he scored an 80. Which measure of center changed the most?

- The mean changes the most.
- The median changes the most.
- The mode changes the most.
- The range changes the most.

NAME: _____

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6.PFA.1

I can use ratios to represent relationships between quantities.



KEY TERMS & CONCEPTS

- A _____ is a comparison of two quantities.
- A ratio can be written with a _____, as a _____, or with the word _____.



3:4

$\frac{3}{4}$

3 to 4

EXAMPLES

What is the ratio of squares to triangles?



- a. 2:3
- b. 2:5
- c. 3:5
- d. 3:2

What is the ratio of squares to total shapes?



- a. 2:3
- b. 2:5
- c. 3:5
- d. 3:2

What is the ratio circles to squares? Choose 2.



- a. 3 to 6
- b. 1 to 1
- c. 1 to 2
- d. 3 to 3

What is the ratio circles to total shapes?



- a. 3 to 6
- b. 1 to 1
- c. 1 to 2
- d. 3 to 3

Fill in the table to show how many miles a car can travel in 4 hours if the ratio is 1 hour to 50 miles.

1	50
2	
3	
4	?

- a. 50 miles
- b. 25 miles
- c. 100 miles
- d. 200 miles

There are 7 boys and 8 girls. What is the ratio of boys to total students?

- a. $\frac{7}{8}$
- b. $\frac{8}{7}$
- c. $\frac{7}{15}$
- d. $\frac{8}{15}$

NAME: _____

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6.PFA.2

I can identify and represent proportional relationships.

**KEY TERMS & CONCEPTS**

- A _____ is a comparison of two quantities.
- A _____ is formed by equivalent ratios.
- A _____ includes pairs of values that represent a proportional relationship.
- A _____ is a ratio that compares two units. A _____ compares a quantity to ONE of another quantity.

EXAMPLES

Complete the ratio table.

- a. 3
b. 20
c. 5
d. 6

x	y
1	2
2	4
?	10

Complete the ratio table.

- a. 2.5
b. 2.75
c. 3
d. 3.5

x	y
2	1.5
4	?
6	4.5

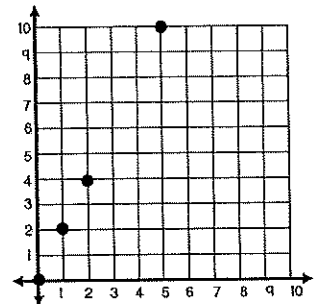
A 12-pack of soda costs \$4.80. What is the unit rate for 1 soda?

- a. \$1.00
b. \$0.80
c. \$0.60
d. \$0.40

cans	1	3	6	12
\$?	\$1.20	\$2.40	\$4.80

TRUE or FALSE? The graph shows a proportional relationship.

- a. True
b. False



TRUE or FALSE? The ratio table represents a proportional relationship.

- a. True
b. False

x	15	18	27	48
y	3	6	9	12

Which verbal description matches the ratio table?

- a. Two pizzas for every 5 students
b. Add 3
c. One pizza for every 5 students
d. Multiply by 2

x	y
?	5
4	10
6	15

NAME: _____

DATE: _____

CLASS: _____

6.PFA.3

I can represent equations and expressions.



KEY TERMS & CONCEPTS

- An _____ represents a quantity. It does not have an equal sign.
- An _____ is a mathematical sentence. It **does** have an equal sign.

2 is a _____
 3 and 15 are _____
 x is a _____

$$2x + 3 = 15$$

2x, 3, and 15 are _____
 2x + 3 and 15 are _____
 2x + 3 = 15 is an _____

EXAMPLES

In the equation $3x - 6 = -24$,
 3x is a _____.

- a. coefficient
- b. term
- c. constant
- d. expression

In the equation $8 + 5x = 32 - 7y$, how many
 constants are there?

- a. 2
- b. 5
- c. 3
- d. 1

Which algebraic equation represents
 "y is 6 less than x"?

- a. $y = 6 - x$
- b. $x = 6 - y$
- c. $y = x - 6$
- d. $x = y - 6$

Which verbal expression represents " $2r + 3$ "?

- a. Two plus r plus 3
- b. 2 increased by r and 3
- c. The product of 2 and 3
- d. 2 times r plus 3

Which equation matches the model?

Key: $\square = x$ $\blacksquare = -x$
 $\bigcirc = 1$ $\bullet = -1$

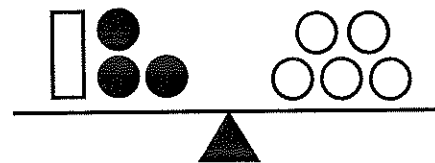
- a. $x + 4 = -8$
- b. $4x = -8$
- c. $4x = 8$
- d. $4 + x = 8$



What is the solution to the equation?

Key: $\square = x$ $\blacksquare = -x$
 $\bigcirc = 1$ $\bullet = -1$

- a. $x = 8$
- b. $x = 5$
- c. $x = 2$
- d. $x = -3$



NAME: _____

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CLASS: _____

6.FA.3 (cont.)

I can solve one-step equations and confirm solutions.

**KEY TERMS & CONCEPTS**

- To solve an equation, use _____ operations.
- After identifying the operation, perform the inverse to both sides of the equal sign to _____ the variable.
- Check the solution by plugging the value of the variable into the _____ equation.

EXAMPLES

Solve: $y - 8 = 3$

- a. $y = 5$
- b. $y = -5$
- c. $y = -11$
- d. $y = -11$

Solve: $-4x = 28$

- a. $x = 24$
- b. $x = -7$
- c. $x = 32$
- d. $x = 7$

Solve: $15 = k + 20$

- a. $k = 35$
- b. $k = 5$
- c. $k = -5$
- d. $k = -35$

Solve: $\frac{x}{-8} = -2$

- a. $x = 10$
- b. $x = 16$
- c. $x = -16$
- d. $x = -10$

TRUE or FALSE?

 $z = -4$ is a solution to $z - (-3) = 7$.

- a. True
- b. False

TRUE or FALSE?

 $p = 8$ is a solution to $\frac{1}{2}p = 4$

- a. True
- b. False

NAME: _____

DATE: _____

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6.PFA.4

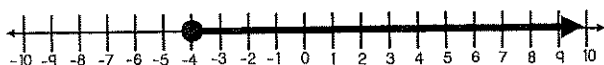
I can represent linear inequalities.

**KEY TERMS & CONCEPTS**

- An _____ represents a relationship between values that are not equal.
- To graph an inequality, use an _____ circle for $>$ (greater than) and $<$ (less than).
- Use a _____ circle for \geq (greater than or equal to) and \leq (less than or equal to).
- Draw an arrow to the _____ for $>$ and \geq . Draw an arrow to the _____ for $<$ and \leq .

EXAMPLES

What inequality represents the graph?

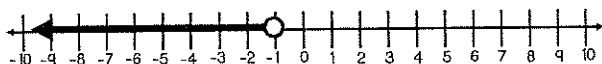


- $x > -4$
- $x < -4$
- $x \geq -4$
- $x \leq -4$

Which inequality could be used to show that Stephen made at least \$50 mowing grass?

- $x > 50$
- $x < 50$
- $x \geq 50$
- $x \leq 50$

Which situation matches the graph?



- The winter weather is greater than -1 degree.
- The winter weather is at most -1 degree.
- The winter weather is less than -1 degree.
- The winter weather is at least -1 degree.

Which number makes the inequality true?
 $12 < p + 5$

- 7
- 7
- 8
- 6

Which set includes possible solutions to the inequality $-1 \geq x$

- $\{-1, 0, 5, 8\}$
- $\{-1, 0, 1, 2\}$
- $\{-1, -4, -5, -10\}$
- $\{-1, -4, 4, 10\}$

Which situation represents the inequality $k \leq 4$?

- Sally bought a maximum of 4 shirts.
- Mark did less than 4 math problems.
- Jordan solved a minimum of 4 puzzles.
- Mya baked more than 4 cupcakes.