

MATH INSTRUCTION

6th Grade Ms. Ismail

Hello Parent / Guardians

Your Scholar has been assigned this packet to complete for grading.

Please ensure that your scholar completes all sections that are assigned.

Your scholar is able to DOJO me to ask any questions regarding this work. He/She should also log into khanacademy.org for assistance.

Please follow the below schedule

| Days | Class work Page | Section to complete | Homework Page | Section to complete | YouTube connection for class work |
|------|--------------------|-------------------------------------|------------------|------------------------|---|
| 1 | M4-71 | Write, Remember, and Practice | M4-72 | Review | https://www.khanacademy.org/math/basic-geo/basic-geo-coord-plane/coordinate-plane-4-quad/v/plot-ordered-pairs |
| 2 | M5-101 | Write, Remember, and Practice | M5-102 | Review | https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-data-statistics |
| 3 | M2-67 | Write, Remember, and Practice | M2-68 | Review | https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-ratios-prop-topic |
| 4 | M2-83 | Write, Remember, and Practice | M2-84 | Review | https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-ratios-prop-topic#cc-6th-ratio-word-problems |
| 5 | M3-51 | Write, Remember, and Practice | M3-52 | Review | https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-expressions-and-variables |

| Days | Class work Page | Section to complete | Homework Page | Section to complete | YouTube connection for class work |
|--------------|--|-------------------------------------|---|------------------------|---|
| 6 | M3-33 | Write, Remember, and Practice | M3-34 | Review | https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-expressions-and-variables |
| 7 | M3-117 | Write, Remember, and Practice | M3-117 | Review | https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-equations-and-inequalities |
| 8 | M3-133 | Write, Remember, and Practice | M3-134 | Review | https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-equations-and-inequalities |
| 9 | M1-129 | Write, Remember, and Practice | M1-130 | Review | https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-geometry-topic |
| 10 | M1-37 | Write, Remember, and Practice | M1-38 | Review | https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-geometry-topic |
| Extra Credit | Page 47 / Part C Problems 1-8 Show all work | | https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-ratios-prop-topic | | |
| Extra Credit | Page 47-48 /Part B Problems 1-6 show all work | | https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-ratios-prop-topic | | |
| Extra Credit | Page 48 / Part B Problems 1-6 Show all work | | https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-ratios-prop-topic | | |
| Extra Credit | Page 96 / Part A Problems 1-6 | | https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-negative-number-topic | | |
| Extra Credit | Page 96 / Part B Problems 1-6 | | https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-negative-number-topic | | |

Assignment

Write

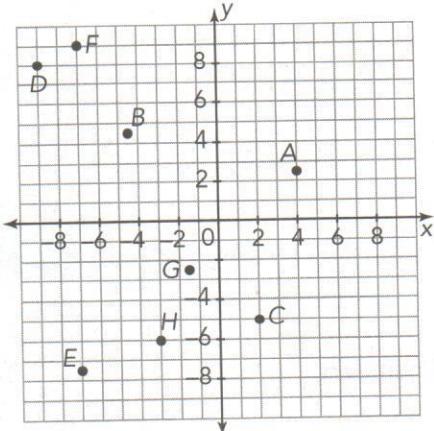
Use the terms **axis**, **quadrant**, and **coordinates** to explain how ordered pairs that differ only by sign are related to each other.

Remember

The Cartesian coordinate plane is formed by two perpendicular number lines that intersect at the zeros, or the origin. The intersecting number lines divide the plane into four regions, called quadrants.

Practice

1. Identify the ordered pair associated with each point graphed on the coordinate plane.



2. Plot and label the locations of points P through Z on a coordinate plane. Draw line segments from point to point, beginning and ending at point P . Describe the resulting figure.

| | | |
|--------------|-------------|-------------|
| $P (0, 5)$ | $Q (1, 3)$ | $R (4, 3)$ |
| $S (2, 1)$ | $T (4, -3)$ | $V (0, -1)$ |
| $W (-4, -3)$ | $X (-2, 1)$ | $Y (-4, 3)$ |
| $Z (-1, 3)$ | | |

3. Plot the ordered pair (a, b) in Quadrant I of a coordinate plane and the ordered pair (c, d) in Quadrant III.

Plot and label each additional ordered pair. Explain how you knew where to plot each point.

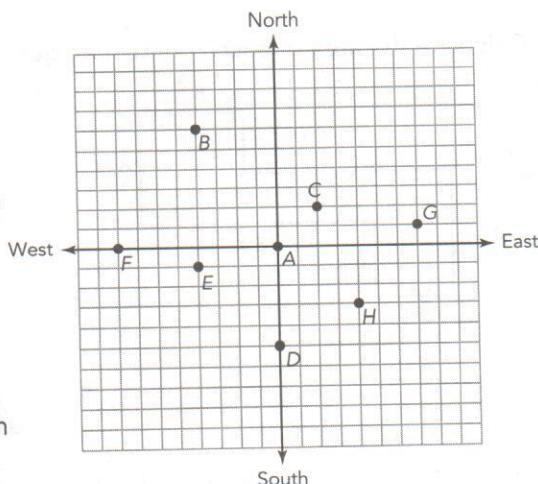
- a. $(-a, b)$ b. $(a, -b)$ c. $(-a, -b)$ d. $(-c, d)$ e. $(c, -d)$ f. $(-c, -d)$

4. The coordinate plane shown represents a map of Paul's neighborhood. Each square represents one city block.

Paul's house is located at point A , which is the origin.

The other points represent the following locations.

- B – USA Bank C – Paul's friend Franco's house
D – Gray's Grocery Store E – Post Office
F – Edward Middle School G – Playground
H – Smiles Orthodontics



5. Explain how Paul can get to the given destination from his house if he were to first walk east or west and then walk north or south. Then, determine the coordinates of the destination point and the quadrant in which the point is located.

- a. USA Bank b. Smiles Orthodontics
c. Franco's house d. Playground
e. Post Office

- Identify the ordered pairs associated with B and E . Describe how the ordered pairs are similar.
- Write an absolute value equation using the y -coordinates of the points to calculate the distance between B and E .
- How can an absolute value equation help you calculate the distance from one point to another on the coordinate plane when the points are on the same vertical or horizontal line?

Stretch

Create a rectangle $ABCD$ on a coordinate plane that meets the following conditions:

- all four points are in different quadrants
- point A is in Quadrant II with coordinates $(-a, b)$
- the distance from point A to point B is $3a$
- the distance from point A to point D is $4b$
- neither axis is a line of symmetry in the rectangle

Review

Determine two rational numbers that are between the two given rational numbers.

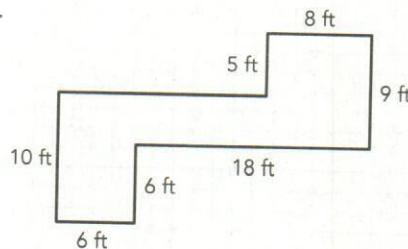
- 3.4 and 3.5
- $\frac{12}{5}$ and $\frac{13}{5}$

State the opposite of each number and plot both numbers on a number line.

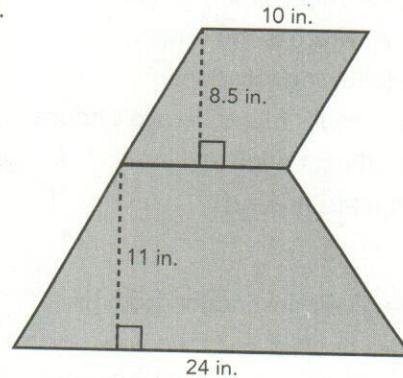
- $2\frac{1}{8}$
- 5.97

Calculate the area of each composite figure.

5.



6.



Assignment

Write

Write the term that best completes each statement.

| range | quartiles | interquartile range | five-number summary |
|-------|-----------|---------------------|---------------------|
|-------|-----------|---------------------|---------------------|

1. The _____ is the difference between the first quartile and the third quartile.
2. The _____ for a set of data is the difference between the maximum and minimum values.
3. _____ are values that divide a data set into four equal parts once the data are arranged in ascending order.
4. A(n) _____ lists the minimum and maximum values, the median, and the quartiles for a set of data.

Remember

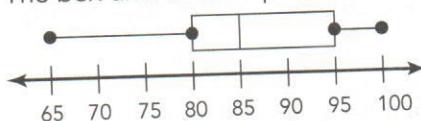
To summarize and describe the spread of data values, you can use a five-number summary. A five-number summary includes 5 values from a data set:

- Minimum: the least value in the data set
- Q1: the first quartile, or the median of the lower half of data
- Median: the median of the data set
- Q3: the third quartile, or the median of the upper half of data
- Maximum: the greatest value in a data set.

The representation of a five-number summary is called a box-and-whisker plot, or simply a box plot.

Practice

1. The box-and-whisker plot shows the distribution of scores on a history quiz.



1. The box-and-whisker plot shows the distribution of scores on a history quiz.
 - a. Identify the median of the data and interpret its meaning.
 - b. Identify the range of the data and interpret its meaning.
2. Answer each question using the data set: 0, 5, 5, 15, 30, 30, 45, 50, 50, 60, 75, 110, 140, 240, 330.
 - a. Sketch a box-and-whisker plot.
 - b. What is the median for the data set?
 - c. What is Q3 for the data set?

3. Answer each question using the data set: 10, 10, 10, 10, 35, 75, 90, 95, 100, 175, 420, 490, 515, 515, 790.
- Sketch a box-and-whisker plot.
 - What do you notice about this box-and-whisker plot?
 - What is the median for the data set?
4. The residents of Summersville, West Virginia, are concerned about people speeding through their town on US Route 19. The police decide to monitor the speed of the cars that pass through the town at various times during the day. The data show the recorded speeds in miles per hour of 23 cars at 7:30 am on one Wednesday morning.
- 73, 68, 72, 61, 51, 68, 70, 53, 72, 71, 46, 51, 55, 53, 65, 57, 65, 57, 58, 68, 61, 48, 83
- What is the range of data?
 - Construct a box-and-whisker plot of the data.
 - Interpret each number in the five-number summary.
 - What does the IQR value tell you about the speeds of the cars?
 - If the speed limit through the town is 50 miles per hour, should the residents be concerned based on this data?
5. San Francisco, California, and Richmond, Virginia, are located at about the same latitude on opposite sides of the United States. The table shows the amount of rainfall each city gets on average each month.

| | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
|----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| San Francisco, CA | 4.4 in. | 3.3 in. | 3.1 in. | 1.4 in. | 0.3 in. | 0.1 in. | 0.0 in. | 0.1 in. | 0.3 in. | 1.3 in. | 2.9 in. | 3.1 in. |
| Richmond, VA | 3.3 in. | 3.3 in. | 3.6 in. | 3.0 in. | 3.8 in. | 3.6 in. | 5.0 in. | 4.4 in. | 3.3 in. | 3.5 in. | 3.3 in. | 3.3 in. |

- Calculate and interpret the range of rainfall for each city.
- Construct box-and-whisker plots for the average rainfall for each city on the same graph.
- Compare the rainfall in San Francisco and Richmond. Describe the shape of each box plot.
- Interpret the IQR for the rainfall in each city.

Stretch

An arithmetic sequence is formed by adding (or subtracting) the same number over and over.

For example, 2, 5, 8, 11, 14, 17 . . . is an arithmetic sequence formed by adding 3 over and over after choosing a starting number.

- Create box-and-whisker plots using different arithmetic sequences as data.
- How are the plots similar?
- What do you notice about the IQR of each plot?

Assignment

Write

Describe how addition can be used with ratio tables to create equivalent ratios. Use examples in your explanation.

Remember

You can use a table to represent, organize, and determine equivalent ratios. You can use addition and multiplication to create equivalent ratios.

Practice

Each table represents the ratio of yellow daffodils to white daffodils for different garden displays.

Complete each ratio table. Explain your calculations.

| | | | | | |
|----|------------------|----|----|----|----|
| 1. | Yellow daffodils | 9 | 36 | 45 | |
| | White daffodils | 15 | | | 90 |

| | | | | | |
|----|------------------|---|----|----|----|
| 2. | Yellow daffodils | 7 | | 28 | |
| | White daffodils | 6 | 12 | | 42 |

| | | | | | |
|----|------------------|----|----|---|----|
| 3. | Yellow daffodils | 32 | | | 16 |
| | White daffodils | | 48 | 6 | 12 |

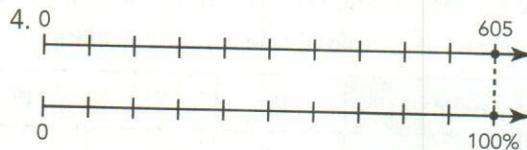
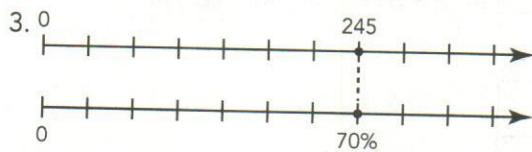
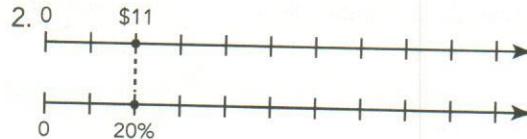
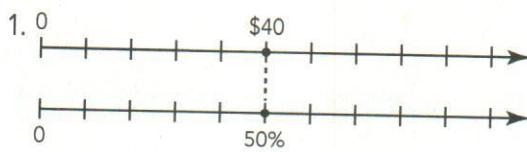
| | | | | | |
|----|------------------|---|---|----|---|
| 4. | Yellow daffodils | 5 | 1 | | 9 |
| | White daffodils | | 3 | 30 | |

| | | | | | |
|----|------------------|----|-----|----|----|
| 5. | Yellow daffodils | | 105 | 84 | 21 |
| | White daffodils | 20 | 60 | | |

| | | | | | |
|----|------------------|----|----|----|---|
| 6. | Yellow daffodils | 55 | 22 | 77 | |
| | White daffodils | 25 | 10 | | 5 |

Stretch

Complete each double number line.



Review

1. In tennis, an ace is a legal serve that cannot be returned and is not even touched by the opponent's racket. Cecelia has an excellent serve. Last week, Cecelia hit 7 aces in 2 matches.
 - a. If she plays 6 matches in the regional tournament, how many aces should she expect? Show your work.
 - b. If she plays 10 matches in the regional tournament, how many aces should she expect? Show your work.
2. The winning time for the middle school 4-person 100-meter relay was 62.59 seconds. Suppose that each runner ran exactly the same amount of time. What would the time be for each runner?
3. Spring Hill Park is on a rectangular piece of land that measures 0.75 mile by 1.25 miles. Draw and label a rectangle to represent the park. Then determine the area of the park.
4. Determine each product.
 - a. 25×0.31
 - b. 7.05×3.72

Assignment

Write

Compare the graph of a ratio relationship with the graph of a relationship that is not represented by a ratio. How are they similar and different? Use an example to explain.

Remember

Just as equivalent ratios can be represented using tables and double number lines, they can also be represented in the coordinate plane. The ratio $\frac{y}{x}$ is plotted as the ordered pair (x, y) .

When you connect the points that represent the equivalent ratios, you form a straight line that passes through the origin. In contrast, non-equivalent ratios are those represented by points that cannot be connected by a straight line through the origin.

Practice

Create a graph to represent the values shown in each ratio table.

| Weight (pounds) | 1 | 2 | 4 | 5 |
|-----------------|---|---|----|----|
| Cost (dollars) | 3 | 6 | 12 | 15 |

| Time (minutes) | 15 | 30 | 45 | 60 |
|----------------|----|-----|-----|-----|
| Calories | 80 | 160 | 240 | 320 |

| Time (minutes) | 15 | 30 | 45 | 60 |
|------------------|-----|----|-----|----|
| Distance (miles) | 1.5 | 3 | 4.5 | 6 |

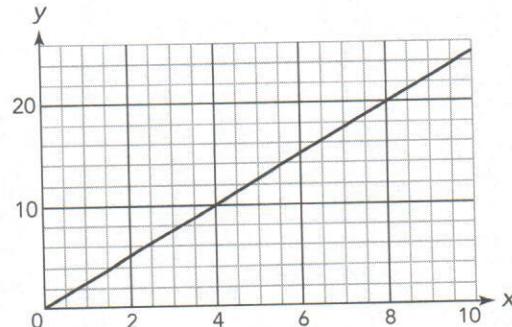
| Time (hours) | 1 | 3 | 5 | 7 |
|------------------|----|----|-----|-----|
| Distance (miles) | 25 | 75 | 125 | 175 |

| Time (seconds) | 1 | 10 | 15 | 20 |
|----------------|----|-----|-----|-----|
| Data (Mb) | 10 | 100 | 150 | 200 |

| Time (minutes) | 1 | 5 | 6 | 10 |
|----------------|---|----|----|----|
| Height (feet) | 6 | 30 | 36 | 60 |

Stretch

Create a scenario that could be represented by the relationship on the given graph. Describe the quantities, label the axes, and identify at least 4 equivalent ratios.



Review

1. Ellen loves to make her own clothes. With 45 yards of cloth, she can make 5 dresses. Create a double number line to explain your reasoning for each question.
 - a. If Ellen has 72 yards of cloth, how many dresses can she make?
 - b. If Ellen is going to make a dress for herself, how many yards of cloth does she need?
2. A customer used a \$10 bill to pay for a 39-cent candy bar. Simone returned 61 cents. What mistake did Simone make? Explain how she should correct her mistake.
3. A grocery store is selling ground beef for \$1.89 per pound. How much does it cost to buy 2.5 pounds?
4. Use estimation to place the decimal point in the correct position in each quotient.
 - a. $2.1 \overline{)48.72} = 232$
 - b. $8 \overline{)204.8} = 256$

Assignment

Write

Describe 3 different ways that you can use the Distributive Property to rewrite expressions. Provide an example for each.

Remember

To rewrite an algebraic expression with as few terms as possible, use the properties of arithmetic and the Order of Operations.

An algebraic expression containing terms can be written as the product of two factors by applying the Distributive Property.

Practice

1. Represent each algebraic expression by sketching algebra tiles. Rewrite the expression in a fewer number of terms, if possible.
 - a. $x^2 + 2y^2 + 5$
 - b. $y^2 + 3y + 1 + y$
2. Rewrite each expression by combining like terms.
 - a. $4.5x + (6y - 3.5x) + 7$
 - b. $\left(\frac{2}{3}y + \frac{5}{8}x + \frac{1}{4}\right) + \left(\frac{1}{4}x + \frac{1}{2}\right)$
3. Nelson is going on an overnight family reunion camping trip. He is in charge of bringing the wood for the campfire. He will start the fire with 6 logs and then plans to add 3 logs for each hour the fire burns.
 - a. Represent the number of logs he will use as an algebraic expression.
 - b. Suppose the family decides to stay for 2 nights next year. Write the expression for the number of logs they would need for 2 nights.
 - c. Create a model of the situation in part (b) using your algebra tiles, and then sketch the model.
 - d. Rewrite the expression in part (c) using as few terms as possible.
 - e. Nelson's cousin believes they will only need one-third of the firewood Nelson brings for one night. Represent this as an expression and then use the Distributive Property to rewrite the expression.
 - f. There are several family members who will be visiting for the day only. The campground charges \$6 per car, plus \$2 per visitor. One of the families brings a coupon for \$3 off their total fee. Write the expression that represents their total cost for the day. Define the variables.
 - g. The two oldest uncles at the reunion insist on paying the bill for the daily visitors. They will split the bill equally. Represent the amount of money each uncle will pay as an expression. Then use the Distributive Property to rewrite the expression.
4. Rewrite each expression by applying the Distributive Property and combining like terms.
 - a. $7(2x + y) + 5(x + 4y)$
 - b. $9x + 6y + \frac{12y + 16x}{4}$
 - c. $\frac{6(x + 1) + 30}{6}$
5. Rewrite each expression as a product of two factors, so that the coefficient of the variable is 1.
 - a. $6x + 7$
 - b. $\frac{2}{3}x + 8$

Stretch

1. Simplify the algebraic expression to include as few terms as possible.

$$3[2x + 4(5y + 1)] + \frac{1}{4}[8y + 12\left(\frac{2}{3}x + \frac{1}{6}\right)]$$

2. Rewrite each algebraic expression as the product of two factors, such that the coefficient of the term with the highest exponent is 1.

a. $2x^2 + 5x + 1$

b. $\frac{3}{4}x^3 - 9x^2 + \frac{2}{3}x + 10$

c. $2.6y^2 + 3.9y - 12.48$

Review

1. Sheldon Elementary School has a school store that sells many items including folders, pencils, erasers, and novelty items. The parent association is in charge of buying items for the store.

- a. One popular item at the store is scented pencils that come in packs of 24 from the retailer. Write an algebraic expression that represents the total number of scented pencils they will have available to sell. Let p represent the number of packs of scented pencils.

- b. Another popular item at the store is animal-themed folders. Each pack of folders contains 6 folders.

The store currently has 4 packs in the store and would like to order more. Write an algebraic expression for the total number of folders they will have after they order more folders. Let x represent the number of packs of folders they buy.

- c. The latest fad is animal-shaped rubber bracelets. The bracelets come in a pack of 24. Write an algebraic expression that represents the cost of each bracelet. Let c represent the cost of a pack of 24 bracelets.

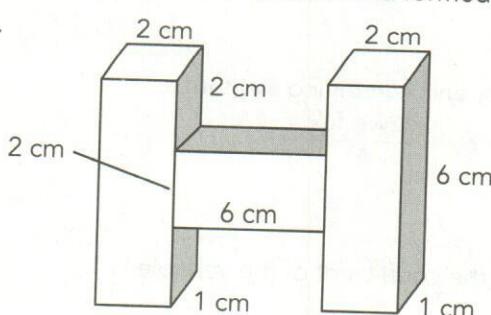
2. Determine which rate is faster.

- a. 185 miles in 3 hours or 490 miles in 8 hours

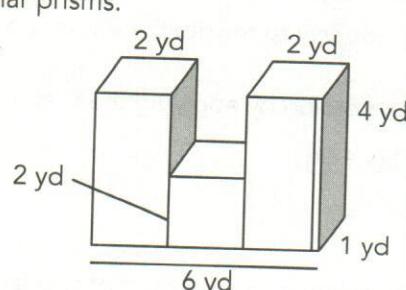
- b. 70 miles per hour or 100 kilometers per hour

3. Calculate the volume of each solid formed by rectangular prisms.

a.



b.



Assignment

Write

Complete each statement with the correct term: algebraic expression, variable, evaluate an algebraic expression, constant, coefficient.

1. A(n) _____ is a letter used to represent a quantity that varies.
2. A(n) _____ is a number, or quantity, that a variable is multiplied by in an algebraic expression.
3. A number, or quantity, that does not change its value is called a(n) _____.
4. A mathematical phrase involving at least one variable is called a(n) _____.
5. To _____ means to determine the value of the expression.

Remember

Whenever you perform the same mathematical process over and over, you can write a mathematical phrase, called an algebraic expression, to represent the situation.

Practice

Write an algebraic expression to represent each situation.

1. A T-shirt costs \$5.99.
 - a. How much will you spend if you buy x T-shirts?
 - b. Evaluate your expression to calculate the amount of money you will spend if you buy 4 shirts or 10 shirts.
2. You have 7 folders and you want to put the same number of pages in each folder.
 - a. If you have a total of p pages, how many pages will be in each folder?
 - b. Evaluate your expression to calculate the number of pages in each folder if you have 147 pages or 245 pages.
3. You have a coupon for \$5 off your total bill at Mama's Meals on Main.
 - a. How much will you pay after using the coupon if your bill was b dollars?
 - b. Evaluate your expression to calculate the amount you will pay if your bill was \$23.45 or \$54.83.
4. You have already read two and a half hours for the Read-a-Thon.
 - a. How long will you have read if you read an additional h hours?
 - b. Evaluate your expression to calculate the amount of time you will have read if you read 3 or $5\frac{1}{2}$ additional hours.

Write an algebraic expression that represents each verbal expression.

5. six times a number plus 3
6. four times a number subtracted from 2
7. a number squared divided by 2 and added to 16
8. five plus a number and then multiplied by 8

Identify the number of terms and then the terms themselves for each algebraic expression.

9. $6y + 14$
10. $7x - 3y + 12z$
11. $104a + 224b$

Evaluate each algebraic expression for the given value.

12. $34 - y^2$ for $y = 5$
13. $m^3 + 18$ for $m = 2$
14. $\frac{d}{5} + 42$ for $d = 70$

Stretch

Farmer Lyndi raises chickens and goats.

1. Write an expression for the total number of animal legs on Lyndi's farm.
2. How many animal legs are on the farm if Lyndi has 16 chickens and 6 goats?
3. Suppose Lyndi counted 74 animal legs on the farm. How many of each animal might Lyndi have on the farm?

Review

Evaluate each numeric expression.

1. $56 \div 8 + 3 \cdot 6$
2. $9 \cdot 8 - 29 + 30 \div 15 - 15$

Determine which is the better buy.

3. \$12.99 for 42 ounces or \$2.99 for 10 ounces
4. 3 pounds for \$5.00 or \$1.50 per pound

Determine at least two equivalent ratios for each given ratio.

5. $\frac{2 \text{ eggs}}{5 \text{ cups of milk}}$
6. $\frac{20 \text{ red}}{12 \text{ blue}}$

Assignment

Write

Write a definition for each term in your own words.

- one-step equation
- solution
- inverse operations

Remember

A solution to an equation is the value or values for the variable that makes the equation true. To solve a one-step addition equation, isolate the variable using number sense or the Subtraction Property of Equality.

Practice

Use a bar model to solve each equation.

$$1. x + 7 = 15$$

$$3. 14.5 = 6 + y$$

$$2. 19 = x + 13$$

$$4. a + \frac{1}{2} = 4\frac{3}{4}$$

Solve each equation. Check each solution.

$$5. 34 = x + 17$$

$$7. 7\frac{3}{5} + b = 10\frac{3}{4}$$

$$9. r + 3.4 = 13.1$$

$$6. a + 25 = 92$$

$$8. 24\frac{1}{2} = t + 5\frac{1}{4}$$

$$10. 4.21 = 2.98 + s$$

Stretch

Solve each equation. Check each solution.

$$1. 34 = x - 17$$

$$3. r - 3.4 = 13.1$$

$$2. a - 25 = 92$$

$$4. 24\frac{1}{2} = t - 5\frac{1}{4}$$

Review

Use the Properties of Equality to write 2 equations that have the given solution. Identify which property of equality was used.

$$1. j = 3$$

$$2. 8 = m$$

Define variables and write an algebraic expression to represent each situation.

3. Terrance has one fewer sibling than Casey. Kolbie has three more siblings than Terrance.

4. Connor has half as many comic books as Devyn. Isaac has 4 more comic books than Connor.

Rewrite each expression.

$$5. \frac{2}{3}x + \frac{4}{5}x$$

$$6. \frac{1}{3}\left(\frac{2}{5}x\right)$$

the first time in the history of the world, the
whole of the human race has been gathered
together in one place, and that is the
present meeting of the World's Fair.
The great nations of the world have
gathered here to exhibit their products,
and to show the progress they have made
in the arts and sciences. The United States
is represented by a large number of
exhibits, which are of great interest
and value. The exhibits from other
countries are also very interesting,
and show the progress made by
other nations in the arts and sciences.
The World's Fair is a great
success, and it is a great honor
for the United States to be
represented at such a great
meeting.

Assignment

Write

Explain how to solve the equation $px = q$ for x . Be sure to include the properties you use in the process.

Remember

A solution to an equation is the value or values for the variable that makes the equation true. To solve a one-step multiplication equation, isolate the variable using number sense, the Division Property of Equality, or the Multiplication Property of Equality.

Practice

1. Solve each equation using a bar model.

a. $3x = 10$

b. $\frac{x}{5} = 6$

c. $\frac{3}{5}x = 12$

d. $\frac{5}{4}x = \frac{2}{3}$

2. Solve each equation. Check your solutions.

a. $2.1 = 0.5y$

b. $4r = 26$

c. $\frac{2}{9}h = 8$

d. $\frac{4}{3} = \frac{8}{3}b$

e. $14 = \frac{s}{3}$

f. $3.8x = 2.736$

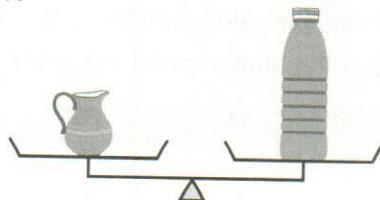
3. Bertrand invites 21 people to his party and wants to give each guest 3 party favors. If n is the total number of party favors he will need to order, the equation that represents this situation is $\frac{n}{21} = 3$.

- If Bertrand orders 58 party favors, will he be able to give each guest 3 party favors? That is, is 58 a solution to the equation?
- If Bertrand orders 62 party favors, will he be able to give each guest 3 party favors?
- How many party favors does Bertrand need to order? Use the equation to determine the solution. State the inverse operation needed to isolate the variable. Then, solve the equation. Check your solution.

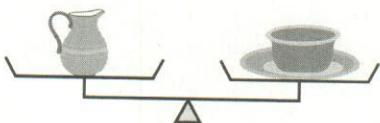
Stretch

Like bar models, balances are also used to model equation solving. Consider the balances shown.

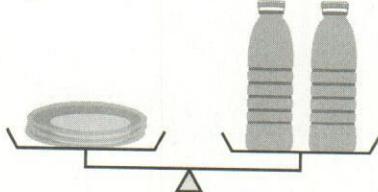
A



B



C



On balance A, a water pitcher balances with a juice bottle. On balance B, the water pitcher balances a cereal bowl and plate. On balance C, three plates balance two juice bottles. How many cereal bowls will balance a water pitcher?

Review

Solve each equation. Check your solutions.

1. $2.6 + j = 7.1$

2. $\frac{21}{5} = b + \frac{3}{4}$

Rewrite each expression as the product of a constant and a sum of terms.

3. $2x + 5$

4. $\frac{1}{2}x + \frac{3}{5}$

Determine the conversion.

5. 6 inches = _____ centimeters

6. 10 kilometers = _____ miles

Assignment

Write

Suppose a rectangular prism has fractional edge lengths. Describe how you can determine the dimensions of cubes that will fill the rectangular prism completely with no overlaps or gaps.

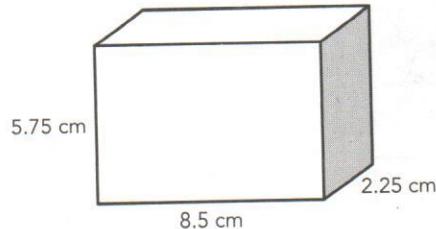
Remember

The volume of a rectangular prism is a product of its length, width, and height:

$$V = l \cdot w \cdot h.$$

Practice

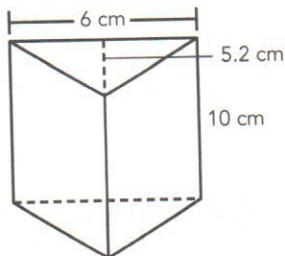
1. Consider the right rectangular prism shown.



- a. List the numbers of faces, edges, and vertices of the rectangular prism.
 - b. Estimate the volume of the rectangular prism.
 - c. Calculate the volume of the rectangular prism.
2. Calculate the volume of the rectangular prism with each set of given dimensions.
- a. 7 in. \times 4 in. \times 2 in.
 - b. 5.2 cm \times 5.2 cm \times 12 cm
 - c. 11.3 cm \times 3.5 cm \times 10.1 cm
 - d. 4.5 m \times 9 m \times 6.7 m
 - e. 2.2 ft \times 5.5 ft \times 15 ft

Stretch

Calculate the volume for the triangular prism.



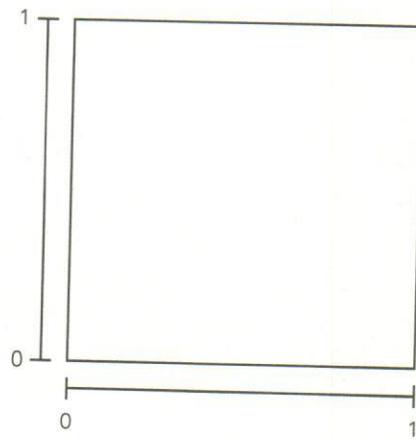
Review

- Elena wants to put together some of her favorite songs on her computer. She wants to store 60 minutes worth of music. Elena wonders how many songs she will be able to include. She looks online and finds a source that says the average song length is $3\frac{1}{2}$ minutes. If this is true, about how many songs will Elena be able to store? Show your work.
- Ling is a camp counselor at a local summer camp. She is in charge of the weekly craft activity for 40 campers. Ling plans to make fabric-covered frames that each require $\frac{1}{6}$ yard of fabric. When Ling sets up for her craft activity, she measures the four separate fabric remnants her director gave her. The table shows how much of each fabric she has. How many campers can use plaid fabric? Show your work.

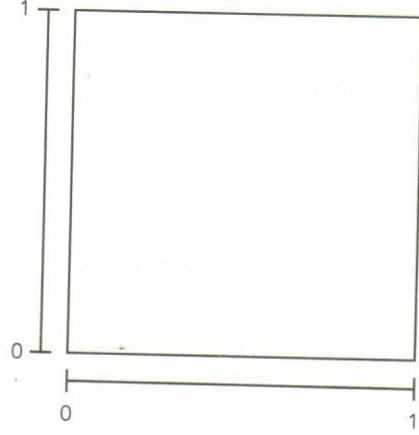
| Fabric | Amount (yards) |
|--------------|-----------------|
| Plaid | $\frac{11}{12}$ |
| Tie-dyed | $1\frac{7}{9}$ |
| Striped | $2\frac{2}{9}$ |
| Polka-dotted | $1\frac{3}{4}$ |

- Represent each product using an area model. Then calculate the product.

a. $\frac{3}{4} \times \frac{1}{3}$



b. $\frac{1}{2} \times \frac{3}{5}$



- Determine the GCF of each set of numbers.

- 72 and 30
- 30 and 54

- Determine the LCM of each set of numbers.

- 10 and 12
- 8 and 9

Assignment

Write

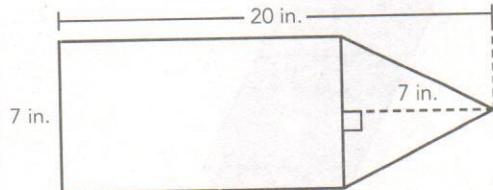
Define *composite figure* and draw a picture of an example.

Remember

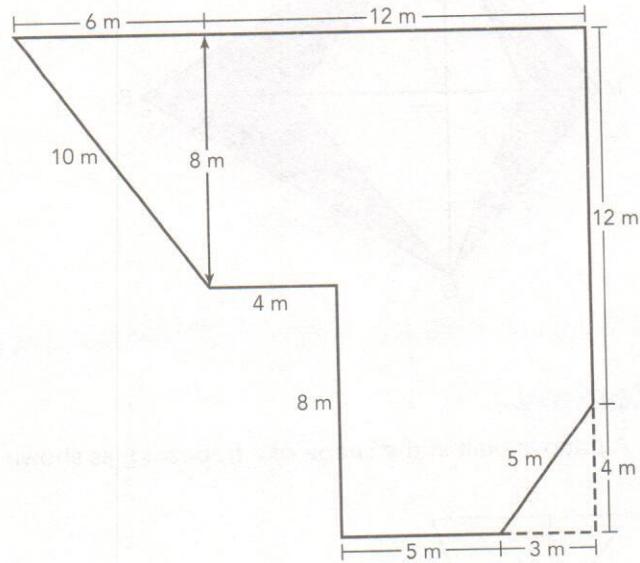
The area of a composite figure can be determined by decomposing it into familiar shapes and then adding together the areas of those shapes.

Practice

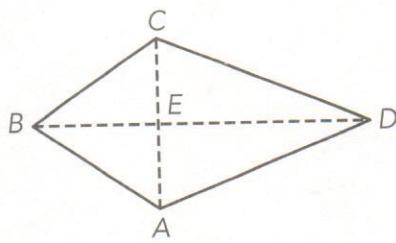
1. Calculate the area of the composite figure.



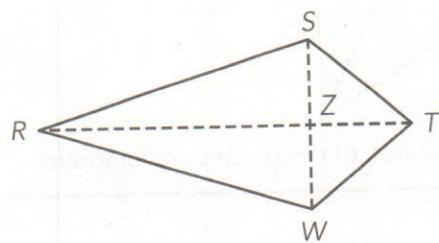
2. A city wants to create a garden according to the plan below. Calculate the area of the garden.



3. In the given kite, $AE = 6 \text{ ft}$, $CE = 6 \text{ ft}$, $BE = 9 \text{ ft}$, and $DE = 15 \text{ ft}$. Determine the area of the kite.



4. In the given kite, $SZ = 10 \text{ yards}$, $WZ = 10 \text{ yards}$, $TZ = 12 \text{ yards}$, and $RZ = 32 \text{ yards}$. Determine the area of the kite.

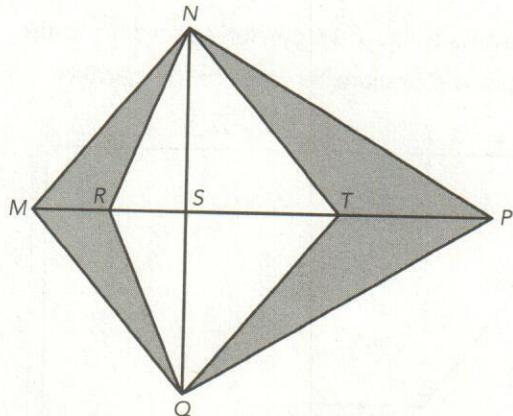


Stretch

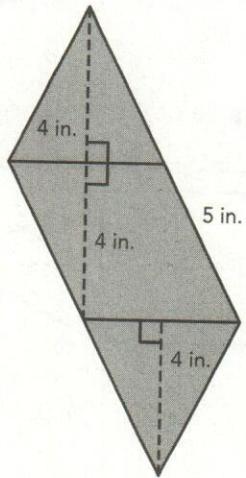
Calculate the area of each shaded region.

1. The figure is composed of 2 kites.

Given: $MR = RS = 5$ feet, $ST = PT = 10$ feet, and $NS = QS = 12$ feet.

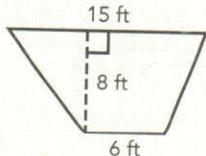


2. The figure is composed of 2 congruent triangles and a rhombus.

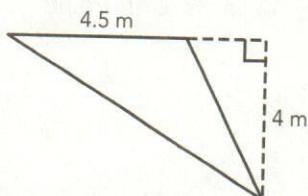


Review

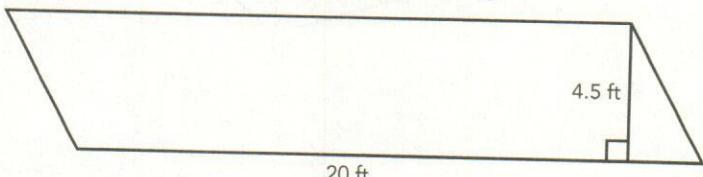
1. A patio is built in the shape of a trapezoid, as shown. Determine the area of the patio.



2. Calculate the area of the given triangle.



3. Calculate the area of the given parallelogram.



4. Determine the area of a square picture that has a side length of 14 cm.

5. Use the Distributive Property to write an equivalent addition expression for $5(17 + 20)$.

Name _____ Date _____

C. Calculate each part using the percent equation.**1.** 35% of 60 is what number?**2.** 25% of 132 is what number?**3.** 5% of 40 is what number?**4.** 15% of 80 is what number?**5.** 24 is what percent of 80?**6.** 3 is what percent of 60?**7.** 30% of what number is 21?**8.** 40% of what number is 26?**IV. Determining a Whole Given a Percent and a Part****A.** Complete a bar model to answer each question.**1.** A basket contains 14 red apples. The rest of the apples are green. The number of red apples is 70% of the total number of apples. How many total apples are in the basket?**2.** Robert is trying to collect all the cards of a special collector's edition set of hockey cards. He has 18 cards, which is 40% of the set. How many cards are in the collection? How many more cards does he need?

- 3.** Uncle Gino's Pizza Parlor sold 200 sausage pizzas last week. That was 80% of the total pizzas they sold. How many total pizzas did they sell last week?

- 4.** The local pet store received a shipment of tropical fish. Seventy-five percent of the tropical fish were clownfish. If the shipment included 60 clownfish, how many total tropical fish were in the shipment?

- 5.** In a survey of favorite pets, 45 students said they preferred cats. This was 30% of the total number of students surveyed. How many students took the survey?

- 6.** Kara has downloaded 250 megabytes of a file onto her computer. The screen tells her that this is 25% of the total file. How many megabytes is the file?

B. Determine each whole for the percent and part given.

1. 12 is 20% of what number?

2. 28 is 35% of what number?

3. 84 is 42% of what number?

4. 32 is 80% of what number?

5. 128 is 64% of what number?

6. 90 is 75% of what number?

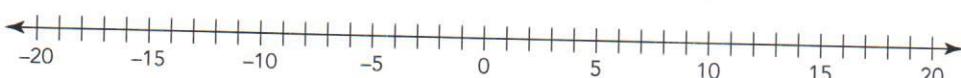
Topic 1

Signed Numbers

Name _____ Date _____

I. Representing Opposites on a Number Line

- A. Plot each number and its opposite on the number line.



1. 4

2. -17

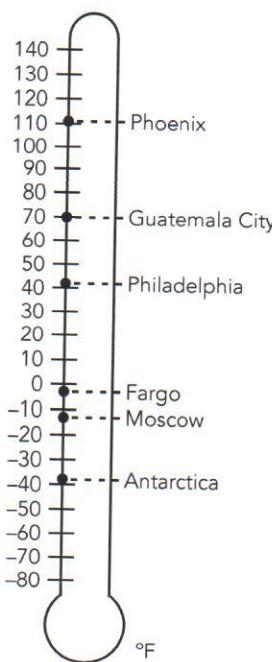
3. $-(-5)$

4. 11

5. $-(-20)$

6. -8

- B. A thermometer is like a vertical number line. This thermometer shows the temperatures for 6 locations around the world in degrees Fahrenheit. Use the thermometer to estimate the temperature in each location.



1. Antarctica

2. Philadelphia

3. Phoenix

4. Moscow

5. Guatemala City

6. Fargo

1920-1921. The first year of the new century was a year of great change.

The year began with a new president, a new cabinet, and a new Congress.

The new president, Warren G. Harding, was a man of great energy and determination.

The new cabinet included a number of experienced and capable men.

The new Congress was a strong and effective body.

The new year brought with it many new challenges and opportunities.

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