Standard 5.1D; 5.1F; 5.1G; 5.2A (L–M)

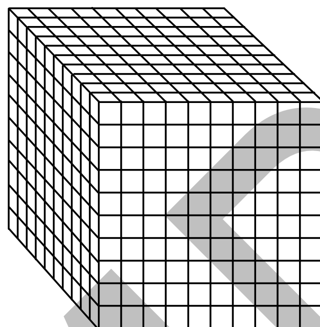
Modeling & Reading Decimals

Using what you know about decimals, fractions, and expanded form, how would you write the following number in expanded form?

4,587.925

The number 4,587.925 has digits in the **tenths**, **hundredths**, and **thousandths** decimal places.

One thousandth is equal to $\frac{1}{1,000}$, or 0.001. Picture a large cube with 1,000 equal pieces.



Talk About It–1: What part of the thousandths cube would represent $\frac{1}{1,000}$, or 0.001? What part of the thousandths cube would represent $\frac{1}{100}$, or 0.01? What part of the thousandths cube would represent $\frac{1}{10}$, or 0.1?

You already know how to recognize written decimals, but how should the decimals be read aloud? Look at the examples below.

Written decimal	67.7
Written decimal read aloud	"sixty-seven and seven tenths"

Written decimal	495.83
Written decimal read aloud	"four hundred ninety-five and eighty-three hundredths"

Written decimal	544.862
Written decimal read aloud	"five hundred forty-four and eight hundred sixty-two thousandths"

Talk About It–2: Why are fractions important when you are reading a decimal aloud? How does the number of places after the decimal point determine how a decimal should be read? Why do you think the decimal point is read as "and"?

Standard 5.1E; 5.1F; 5.4A (L–M)

Finding Factors

You can express any number as the product of two factors. For example, you can express 10 as the product of 5 and 2 (5 x 2 = 10) or 10 and 1 (10 x 1 = 10). You can express 24 as the product of 4 and 6 (4 x 6 = 24), 2 and 12 (2 x 12 = 24), 3 and 8 (3 x 8 = 24), or 1 and 24 (1 x 24 = 24).

On Your Own: Find at least 5 two-digit numbers in your classroom. Write the numbers in the chart below. Then, write the factors of each number.

Two-Digit Number Hunt

Number	Factors

Try It: Read the information below. Then, complete the items that follow. Draw all of your pictures on a separate sheet of paper.

Christopher bought 20 carpet squares to make a rectangular welcome mat for his front door.

1. Christopher decided to put the carpet squares in rows of 5. How many rows could he make with the 20 squares? ____________________ Draw a picture to show how he arranged the carpet squares.
2. Christopher changed his mind and put the carpet squares in rows of 4. How many rows could he make with the 20 squares? ____________________ Draw a picture to show how he arranged the carpet squares.
3. Is there another way that Christopher could arrange the carpet squares to form a rectangle? Draw a picture to represent your answer.
4. Christopher realized that one carpet square was torn and could not be used. How can 19 squares be arranged so they are in even rows? ____________________
5. If Christopher had 25 carpet squares in rows of 5, how many squares would be in each row? ____________________ What shape would the arrangement form? ____________________

Standard 5.1D; 5.1F; 5.1G; 5.3I (M)

Multiplying Fractions

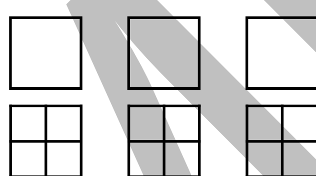
You already know how to multiply fractions by a whole number. For example, you know that $\frac{3}{4}$ can be represented as $3 \times \frac{1}{4}$.

Talk About It: How can the multiplication of a fraction by a whole number be represented as repeated addition of that fraction?

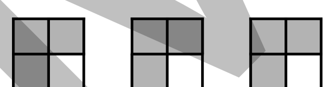
Now, we will look at other ways to represent the multiplication of fractions by a whole number. Look at the example below.

What is $3 \times \frac{3}{4}$? In other words, what is $\frac{3}{4}$ of 3 wholes?

Let's begin with 3 whole squares, and then divide each square into fourths.



Shade $\frac{3}{4}$ of each square.



Count how many fourths have been shaded to find the answer.

$$3 \times \frac{3}{4} = \frac{9}{4} \quad \text{OR} \quad 2\frac{1}{4}$$

If you cannot use a model, you can still find the answer using the method below. The *q* in the expression is the whole number value, and $\frac{a}{b}$ is the fraction.

Expression	Example	Improper Fraction	Mixed Number
$q \times \frac{a}{b} = \frac{q \times a}{b}$	$3 \times \frac{3}{4} = \frac{3 \times 3}{4}$	$\frac{9}{4}$	$2\frac{1}{4}$

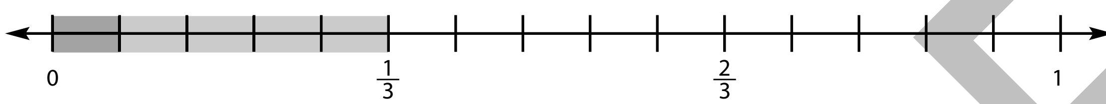
On Your Own: Consider this expression: $6 \times \frac{3}{5}$. How many different ways can it be written? List these ways on a separate sheet of paper.

Standard 5.1D; 5.1F; 5.3J; 5.3L (M)

Divide the Line

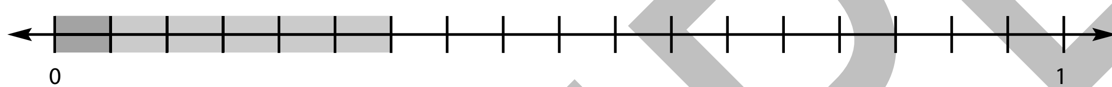
Directions: Look at each number line, and write an equation to represent the shaded portion of the line. Use the example below to help you solve these problems.

Example



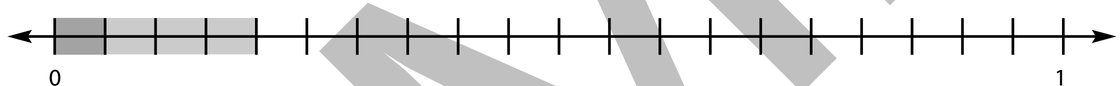
Equation: $\frac{1}{3} \div 5 = \frac{1}{15}$

1\.



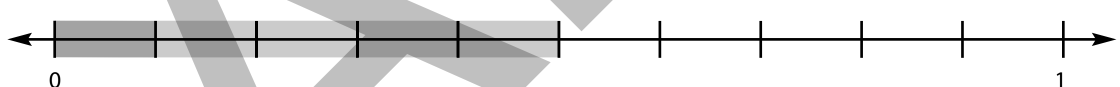
Equation: ______________________

2\.



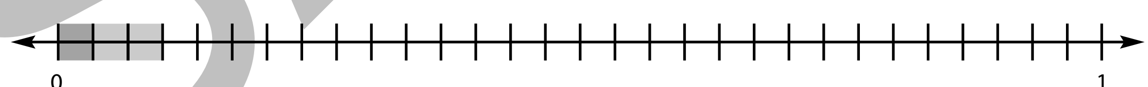
Equation: ______________________

3\.



Equation: ______________________

4\.



Equation: ______________________

Standard 5.1A; 5.1E; 5.1F; 5.4C; 5.4D (L–M)

Number Pattern Practice II

Directions: Read and respond to each item below. Then, circle whether the pattern in each item is **additive** (uses an addition rule) or **multiplicative** (uses a multiplication rule).

1. A company makes artificial wreaths and puts the same number of plastic berries on each wreath. The table to the right shows the total number of plastic berries on each wreath.

   What is the relationship between the number of berries and the number of wreaths?

   ____

   Additive Multiplicative

Number of Plastic Berries	Number of Wreaths
45	3
75	5
105	7

2. Complete the table to the right.

   Additive Multiplicative

x	*y*
2	8
14	20

3. The table to the right shows the total number of computers in different numbers of classrooms.

   What is the relationship between the number of classrooms and the number of computers?

   ____

   Additive Multiplicative

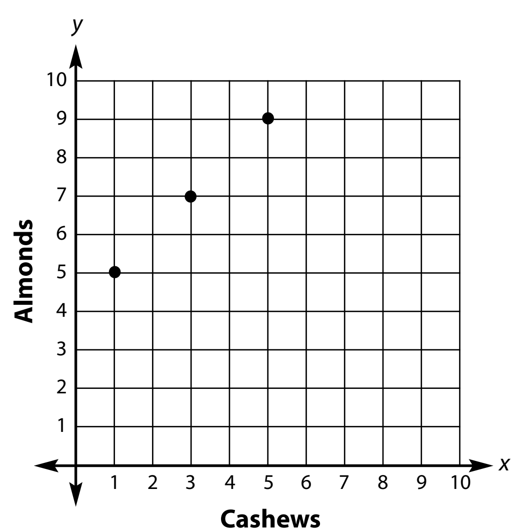
Number of Classrooms	Number of Computers
4	20
9	45
12	60
15	75

4. The points plotted on the grid to the right show the relationship between the number of cashews and the number of almonds a company puts into its bags of trail mix.

   Write an equation to represent the relationship between the number of cashews and the number of almonds in each bag.

   ____

   Additive Multiplicative



Standard 5.1E; 5.1F; 5.5A (L–M)

Shape Up!

Directions: Think about the attributes of each shape below. If a shape has the attribute listed on the left, place a checkmark in the correct box in the chart. Write the name of the shape that has all 3 attributes on the answer line. The first chart is started for you.

Attribute	Kite	Rhombus	Square
4 sides	✔	✔	✔
must have parallel lines			
must have right angles			

1. Answer: ______________________________

Attribute	Quadrilateral	Parallelogram	Rectangle
4 sides			
must have 2 pairs of parallel lines			
can have an acute angle			

2. Answer: ______________________________

Attribute	Right Scalene Triangle	Acute Isosceles Triangle	Obtuse Isosceles Triangle
3 sides			
has 2 equal sides			
has an angle greater than 90˚			

3. Answer: ______________________________

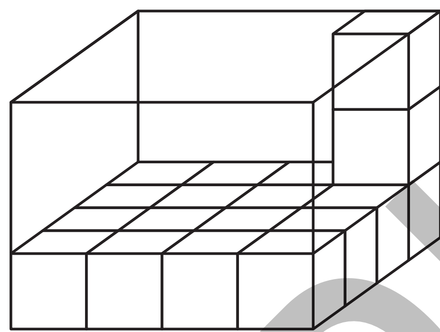
continue to next page

Standard 5.1D; 5.1F; 5.1G; 5.4H; 5.6B (L–M)

Volume Formulas

Base x Height

You already know that you can find the volume of a rectangular prism if you know the volume of one layer and the total number of layers in the prism.



The first layer of the rectangular prism above has 16 unit cubes. The prism has 3 layers.

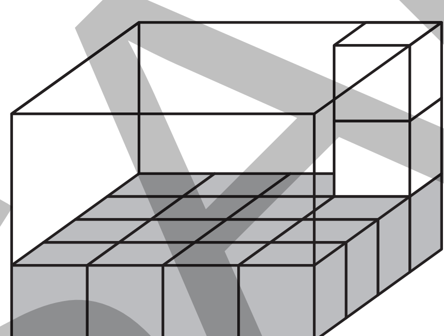
So, the volume of the prism is:

16 + 16 + 16 = 48 cubic units

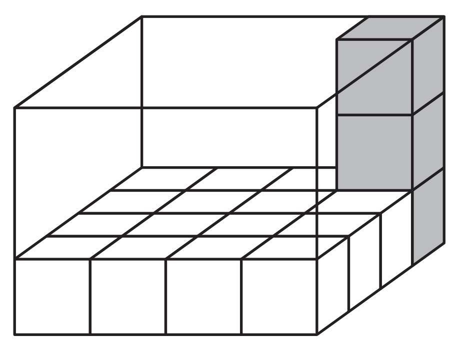
OR

16 x 3 = 48 cubic units

The first layer can also be called the **base** of the rectangular prism.



The number of layers can also be called the **height** of the rectangular prism.



When you multiply the number of unit cubes in the first layer by the total number of layers, you are multiplying the base and the height.

Volume (V) = unit cubes in one layer x number of layers

OR

Volume (V) = base (B) x height (h)

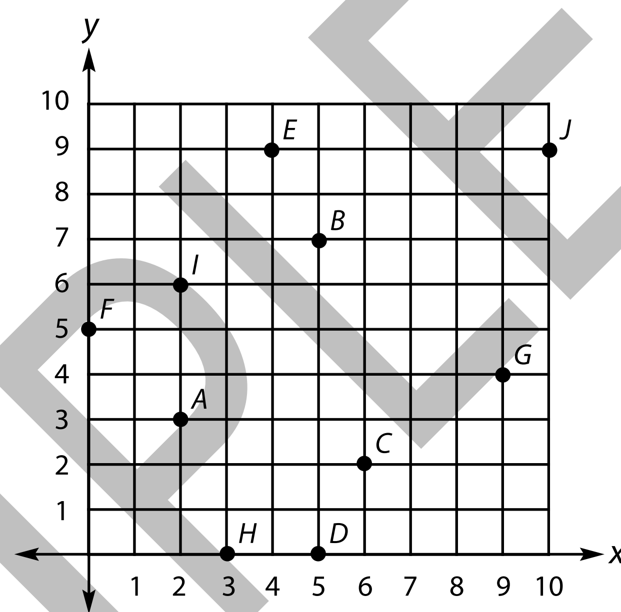
continue to next page

Standard 5.1D; 5.1F; 5.8A; 5.8B (L)

What's the point?

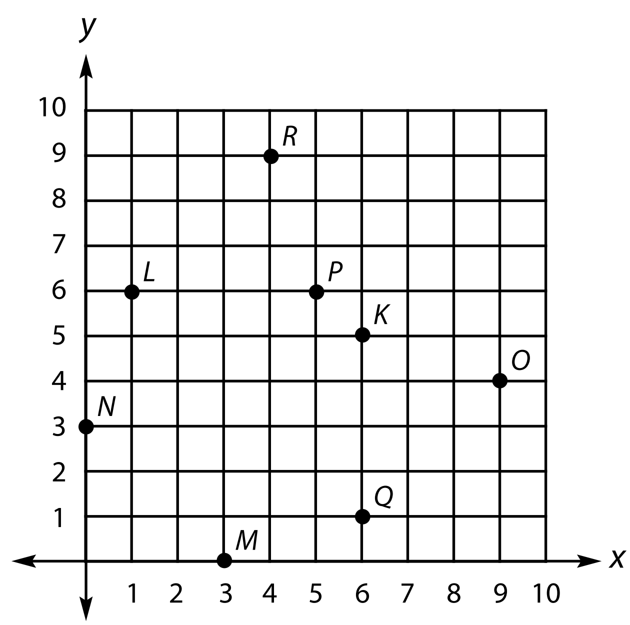
A. Directions: Determine the coordinates for each point on the coordinate plane. Write the coordinates as an ordered pair. The first one is completed for you.

1. Point *A*: (2, 3)
2. Point *B*: ________________
3. Point *C*: ________________
4. Point *D*: ________________
5. Point *E*: ________________
6. Point *F*: ________________
7. Point *G*: ________________
8. Point *H*: ________________
9. Point *I*: ________________
10. Point *J*: ________________



B. Directions: Determine which point on the coordinate plane matches each ordered pair. The first one is completed for you.

11. (3, 0): Point M
12. (9, 4): ________________
13. (1, 6): ________________
14. (4, 9): ________________
15. (5, 6): ________________
16. (0, 3): ________________
17. (6, 1): ________________
18. (6, 5): ________________



Standard 5.1A; 5.1E; 5.1F; 5.9C (L–M)

Using Stem-and-Leaf Plots

Directions: Read the following information, and study the stem-and-leaf plot below. Then, answer the questions that follow.

Mrs. Ramirez works for the county government. She recorded the sales tax rate for all of the cities in the county. Mrs. Ramirez displayed the data she collected as fractions on the stem-and-leaf plot below.

City Sales Tax Rates

Stem	Leaf
5	$\frac{3}{4}$ $\frac{7}{8}$
6	$\frac{1}{8}$ $\frac{1}{2}$ $\frac{7}{8}$
7	0 $\frac{3}{4}$ $\frac{7}{8}$ $\frac{7}{8}$
8	$\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{3}{4}$
9	0 $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{2}$

Key: $5 \mid \frac{3}{4} = 5\frac{3}{4}\%$

1. How many cities have a $9\frac{1}{8}\%$ sales tax rate? ________________
2. How many cities have a 6% sales tax rate? ________________
3. How many cities have a sales tax rate less than 7%? ________________
4. How many cities have a sales tax rate more than 7%? ________________
5. How many cities are in the county? ________________
6. How many different sales tax rates do the cities have? ________________

Working Together: On a separate sheet of paper, write two more questions that could be answered using the stem-and-leaf plot above. Then, trade questions with a partner and answer his/her questions.

Standard 5.1A; 5.1F; 5.1G; 5.10B (L–M)

Gross Income & Net Income

You already know that income is the money people earn by working. You also know that people do not get to keep all of the money they earn.

Talk About It: Why don't people get to keep all of the money they earn? What happens to the money they don't get to keep?

Gross income is the amount of money a person earns before taxes are deducted (taken out) and sent to the government. Gross income equals the number of hours a person works times the person's wage (pay rate per hour).

gross income = hourly rate x hours worked

On Your Own: Read and solve the problem below.

Brian works part-time at a fast food restaurant. He earns $8.50 per hour. Last week, he worked 15 hours at the restaurant. What was Brian's gross income last week?

Answer: ________________

The government takes money from a person's paycheck to pay for government programs and services. An employer withholds money from a person's paycheck to pay income tax and payroll taxes. **Net income** is the amount of money a person actually receives after taxes are withheld. For this reason, net income is sometimes called "take-home pay." Net income is equal to gross income minus the taxes withheld.

net income = gross income – taxes

Try It: Read the information below. Then, complete the items that follow to calculate net income.

Mr. Walton works at a grocery store and is paid every two weeks. He earns $12.50 per hour and works 40 hours each week. Mr. Walton's employer withheld from his paycheck $80.50 for income tax, $62 for Social Security tax, and $14.50 for Medicare tax.

1. What is Mr. Walton's gross income? ________________
2. What is the total tax withheld from his paycheck? ________________
3. What is Mr. Walton's net income? ________________

