

Dear Family,

Throughout the next few weeks, our math class will be learning about rational numbers and the coordinate plane. We will also be learning how to compare numbers and find the distance between points.

You can expect to see homework with real-world problems that involve the coordinate plane.

Here is a sample of how your child was taught to find the distance between two points.

## Vocabulary

**absolute value** The distance from 0 to a number on the number line.

**integers** The set of whole numbers and their opposites.

**quadrants** The four regions of the coordinate plane that are separated by the  $x$ - and  $y$ -axes.

**rational number** Any number that can be written as a ratio  $\frac{a}{b}$ , where  $a$  and  $b$  are integers and  $b \neq 0$ .



### MODEL Distance Between Points

Find the distance from the market to the school.

#### STEP 1

Find the vertical distance from the market to the  $x$ -axis.

The distance from  $(2, 3)$  to  $(2, 0)$  is  $|3| = 3$ .

#### STEP 2

Find the vertical distance from the school to the  $x$ -axis.

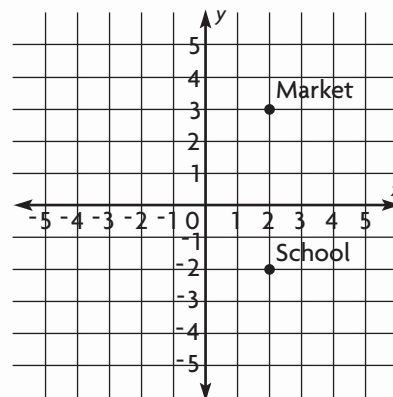
The distance from  $(2, -2)$  to  $(2, 0)$  is  $|-2| = 2$ .

#### STEP 3

Add to find the total distance.

$$3 + 2 = 5$$

So, the distance from the market to the school is 5 units.



## Activity

Find a map of the downtown area of a city that has parallel and perpendicular streets. Take turns finding the number of blocks between two points of interest on the same street. Then find a point of interest given its distance in blocks from another point of interest.

# Carta para la casa

Querida familia,

Durante las próximas semanas, en la clase de matemáticas aprenderemos sobre números racionales y el plano de coordenadas. También aprenderemos a comparar números y a hallar la distancia entre dos puntos.

Llevaré a la casa tareas con problemas de la vida real relacionados con el plano de coordenadas.

Este es un ejemplo de la manera como aprendimos a hallar la distancia entre dos puntos.

## Vocabulario

**valor absoluto** La distancia de 0 a un número en la recta numérica.

**enteros** El conjunto de números enteros y sus opuestos.

**cuadrantes** Las cuatro regiones del plano de coordenadas que están separadas por el eje de las  $x$  y el eje de las  $y$ .

**número racional** Todo número que se pueda escribir como una razón  $\frac{a}{b}$ , donde  $a$  y  $b$  son enteros y  $b \neq 0$ .

### MODELO Distancia entre dos puntos

Calcula la distancia del mercado a la escuela.

#### PASO 1

Halla la distancia vertical del mercado al eje de las  $x$ .

La distancia de  $(2, 3)$  a  $(2, 0)$  es  $|3| = 3$ .

#### PASO 2

Halla la distancia vertical de la escuela al eje de las  $x$ .

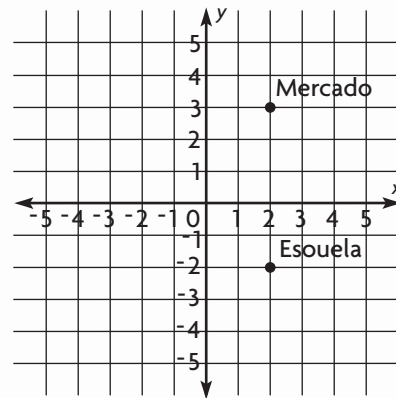
La distancia de  $(2, -2)$  a  $(2, 0)$  es  $|-2| = 2$ .

#### PASO 3

Suma para hallar la distancia total.

$$3 + 2 = 5$$

Por tanto, la distancia del mercado a la escuela es 5 unidades.



## Actividad

Consiga un mapa del centro de una ciudad que tenga calles paralelas y perpendiculares. Túrnense para hallar el número de cuadras entre dos puntos de interés en la misma calle. Luego, busquen un punto de interés dando la distancia en cuadras que lo separa de otro punto de interés.

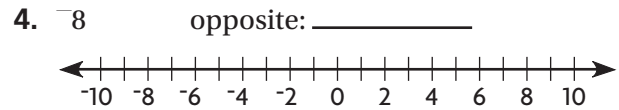
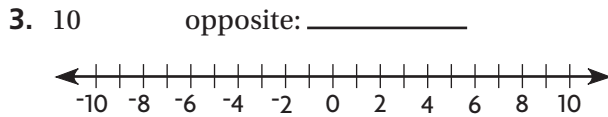
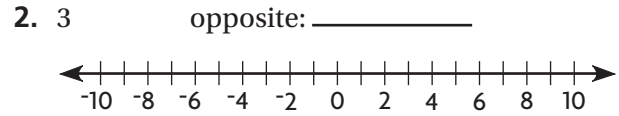
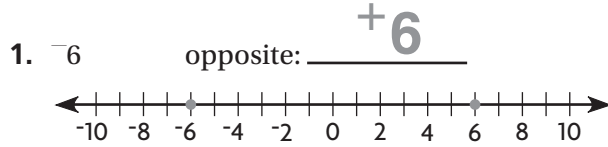
Name \_\_\_\_\_

## Understand Positive and Negative Numbers



**COMMON CORE STANDARDS—6.NS.5, 6.NS.6A** Apply and extend previous understandings of numbers to the system of rational numbers.

Graph the integer and its opposite on a number line.



Name the integer that represents the situation, and tell what 0 represents in that situation.

| Situation   | Integer | What Does 0 Represent? |
|---|---------|------------------------|
| 5. Michael withdrew \$60 from his checking account.             | _____   | _____                  |
| 6. Raquel gained 12 points while playing a video game.          | _____   | _____                  |
| 7. Juan went up 25 feet during a climb on a rock climbing wall. | _____   | _____                  |

Write the opposite of the opposite of the integer.

8.  $-20$  \_\_\_\_\_

9.  $4$  \_\_\_\_\_

10.  $95$  \_\_\_\_\_

11.  $-63$  \_\_\_\_\_

### Problem Solving



12. Dakshesh won a game by scoring 25 points. Randy scored the opposite number of points as Dakshesh. What is Randy's score?

\_\_\_\_\_

13. When Dakshesh and Randy played the game again, Dakshesh scored the opposite of the opposite of his first score. What is his score?

\_\_\_\_\_

## Lesson Check (6.NS.5, 6.NS.6a)

Name the integers that represent each situation.

1. During their first round of golf, Imani was 7 strokes over par and Peter was 8 strokes below par.
2. Wyatt earned \$15 baby-sitting on Saturday. Wilson spent \$12 at the movies.

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## Spiral Review (6.NS.1, 6.NS.3, 6.NS.4)

3. Mr. Nolan's code for his ATM card is a 4-digit number. The digits of the code are the prime factors of 84 listed from least to greatest. What is the code for Mr. Nolan's ATM card?
4. Over a four-year period, a tree grew 2.62 feet. If the tree grows at a constant rate, how many feet did the tree grow each year?

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5. Omarion has  $\frac{9}{10}$  of the pages in a book remaining to read for school. He reads  $\frac{2}{3}$  of the remaining pages over the weekend. What fraction of the book does Omarion read over the weekend?
6. Marianne has  $\frac{5}{8}$  pound of peas. She cooks  $\frac{2}{3}$  of those peas for 5 people. If each person is served an equal amount, how much peas did each person get?

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Name \_\_\_\_\_

**Compare and Order Integers****COMMON CORE STANDARDS—6.NS.7A, 6.NS.7B** Apply and extend previous understandings of numbers to the system of rational numbers.**Compare the numbers. Write < or >.**

1.  $-4 \bigcirc -5$  Think:  $-4$  is to the **right** of  $-5$  on the number line,  
so  $-4$  is **greater than**  $-5$ .

2.  $0 \bigcirc -1$

3.  $4 \bigcirc -6$

4.  $-9 \bigcirc -8$

5.  $2 \bigcirc -10$

6.  $-12 \bigcirc -11$

7.  $1 \bigcirc -10$

**Order the numbers from least to greatest.**

8.  $3, -2, -7$

9.  $0, 2, -5$

10.  $-9, -12, -10$

\_\_\_\_\_ &lt; \_\_\_\_\_ &lt; \_\_\_\_\_

\_\_\_\_\_ &lt; \_\_\_\_\_ &lt; \_\_\_\_\_

\_\_\_\_\_ &lt; \_\_\_\_\_ &lt; \_\_\_\_\_

11.  $-2, -3, -4$

12.  $1, -6, -13$

13.  $5, 7, 0$

\_\_\_\_\_ &lt; \_\_\_\_\_ &lt; \_\_\_\_\_

\_\_\_\_\_ &lt; \_\_\_\_\_ &lt; \_\_\_\_\_

\_\_\_\_\_ &lt; \_\_\_\_\_ &lt; \_\_\_\_\_

**Order the numbers from greatest to least.**

14.  $0, 13, -13$

15.  $-11, 7, -5$

16.  $-9, -8, 1$

\_\_\_\_\_ &gt; \_\_\_\_\_ &gt; \_\_\_\_\_

\_\_\_\_\_ &gt; \_\_\_\_\_ &gt; \_\_\_\_\_

\_\_\_\_\_ &gt; \_\_\_\_\_ &gt; \_\_\_\_\_

17.  $32, 10, -22$

18.  $-2, -4, 0$

19.  $-25, 19, 26$

\_\_\_\_\_ &gt; \_\_\_\_\_ &gt; \_\_\_\_\_

\_\_\_\_\_ &gt; \_\_\_\_\_ &gt; \_\_\_\_\_

\_\_\_\_\_ &gt; \_\_\_\_\_ &gt; \_\_\_\_\_

**Problem Solving**

20. Meg and Derek played a game. Meg scored  $-11$  points, and Derek scored 4 points. Write a comparison to show that Meg's score is less than Derek's score.

\_\_\_\_\_

21. Misha is thinking of a negative integer greater than  $-4$ . What number could she be thinking of?

\_\_\_\_\_

## Lesson Check (6.NS.7a, 6.NS.7b)

The chart shows the high temperatures for seven cities on one day in January.

| Chama        | Chicago     | Denver       | Fargo         | Glen Spey   | Helena       | Lansing     |
|--------------|-------------|--------------|---------------|-------------|--------------|-------------|
| $-5^{\circ}$ | $2^{\circ}$ | $-8^{\circ}$ | $-10^{\circ}$ | $6^{\circ}$ | $-1^{\circ}$ | $3^{\circ}$ |

1. Which city had the lower temperature, Helena or Chicago?
2. Write the temperatures of the following cities in order from greatest to least: Denver, Helena, Lansing

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## Spiral Review (6.NS.1, 6.NS.3, 6.NS.4, 6.NS.5)

3. Fiona starts at the beginning of a hiking trail and walks  $\frac{4}{5}$  mile. She counts the mileage markers that are placed every  $\frac{1}{10}$  mile along the trail. How many markers does she count?
4. If Amanda hikes at an average speed of 2.72 miles per hour, how long will it take her to hike 6.8 miles?

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5. The area of a rectangle is  $5\frac{4}{5}$  square meters. The width of the rectangle is  $2\frac{1}{4}$  meter. Which is the best estimate for the length of the rectangle?
6. Lillian bought 2.52 pounds of tomatoes and 1.26 pounds of lettuce to make a salad for 18 people. If each person got the same amount of salad, how much salad did each person get?

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Name \_\_\_\_\_

**Rational Numbers and the Number Line**



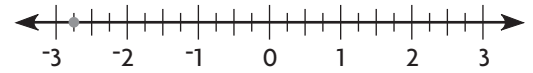
**COMMON CORE STANDARDS—6.NS.6A, 6.NS.6C** Apply and extend previous understandings of numbers to the system of rational numbers.

Graph the number on the number line.

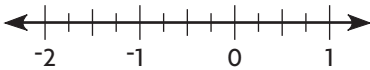
1.  $-2\frac{3}{4}$

The number is between the integers  $-3$  and  $-2$ .

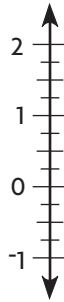
It is closer to the integer  $-3$ .



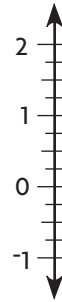
2.  $-\frac{1}{4}$



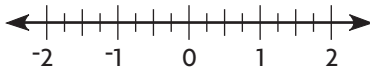
3.  $-0.5$



4.  $1.75$



5.  $1\frac{1}{2}$



State whether the numbers are on the same or opposite sides of zero.

6.  $-2.4$  and  $2.3$

7.  $-2\frac{1}{5}$  and  $-1$

8.  $-0.3$  and  $0.3$

9.  $0.44$  and  $-\frac{2}{3}$

\_\_\_\_\_

Write the opposite of the number.

10.  $-5.23$

11.  $\frac{4}{5}$

12.  $-5$

13.  $-2\frac{2}{3}$

\_\_\_\_\_

**Problem Solving**



14. The outdoor temperature yesterday reached a low of  $-4.5^\circ\text{F}$ . Between what two integers was the temperature?

15. Jacob needs to graph  $-6\frac{2}{5}$  on a horizontal number line. Should he graph it to the left or right of  $-6$ ?

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## Lesson Check (6.NS.6a, 6.NS.6c)

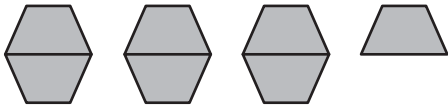
1. What number is the opposite of 0.2?
2. Between which two integers would you locate  $-3.4$  on a number line?

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## Spiral Review (CC.6.NS.1, CC.6.NS.6c, CC.6.NS.7a)

3. Yemi used these pattern blocks to solve a division problem. He found a quotient of 7. Which division problem was he solving?
4. Eric had 2 liters of water. He gave 0.42 liter to his friend and then drank 0.32 liter. How much water does he have left?



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5. To pass a math test, students must correctly answer at least 0.6 of the questions. Donald's score is  $\frac{5}{8}$ , Karen's score is 0.88, Gino's score is  $\frac{3}{5}$  and Sierra's score is  $\frac{4}{5}$ . How many of the students passed the test?
6. Jonna mixes  $\frac{1}{4}$  gallon of orange juice and  $\frac{1}{2}$  gallon of pineapple juice to make punch. Each serving is  $\frac{1}{16}$  gallon. How many servings can Jonna make?

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Name \_\_\_\_\_

## Compare and Order Rational Numbers



**COMMON CORE STANDARDS—6.NS.7A, 6.NS.7B** Apply and extend previous understandings of numbers to the system of rational numbers.

Compare the numbers. Write  $<$  or  $>$ .

1.  $-1\frac{1}{2}$   $\bigcirc$   $-\frac{1}{2}$       Think:  $-\frac{1}{2}$  is to the **left** of  $-\frac{1}{2}$  on the number line,  
so  $-1\frac{1}{2}$  is **less than**  $-\frac{1}{2}$ .

2.  $0.1$   $\bigcirc$   $-1.9$

3.  $0.4$   $\bigcirc$   $-\frac{1}{2}$

4.  $\frac{2}{5}$   $\bigcirc$   $0.5$

5.  $-1.1$   $\bigcirc$   $0$

6.  $\frac{3}{4}$   $\bigcirc$   $\frac{9}{10}$

7.  $-2.5$   $\bigcirc$   $-\frac{3}{1}$

Order the numbers from least to greatest.

8.  $0.2, -1.7, -1$

9.  $-2\frac{3}{4}, -\frac{3}{5}, -1\frac{3}{4}$

10.  $-0.5, -1\frac{2}{3}, -2.7$

\_\_\_\_\_  $<$  \_\_\_\_\_  $<$  \_\_\_\_\_

\_\_\_\_\_  $<$  \_\_\_\_\_  $<$  \_\_\_\_\_

\_\_\_\_\_  $<$  \_\_\_\_\_  $<$  \_\_\_\_\_

Order the numbers from greatest to least.

11.  $-1, -\frac{5}{6}, 0$

12.  $1.82, -\frac{2}{5}, \frac{4}{5}$

13.  $-2.19, -2.5, 1.1$

\_\_\_\_\_  $>$  \_\_\_\_\_  $<$  \_\_\_\_\_

\_\_\_\_\_  $>$  \_\_\_\_\_  $>$  \_\_\_\_\_

\_\_\_\_\_  $>$  \_\_\_\_\_  $>$  \_\_\_\_\_

Write a comparison using  $<$  or  $>$  to show the relationship between the two values.

14. an elevation of  $-15$  m and an elevation of  $-20.5$  m

15. a balance of \$78 and a balance of  $-\$42$

16. a score of  $-31$  points and a score of  $-30$  points

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Problem Solving



17. The temperature in Cold Town on Monday was  $1^\circ\text{C}$ . The temperature in Frosty Town on Monday was  $-2^\circ\text{C}$ . Which town was colder on Monday?

18. Stan's bank account balance is less than  $-\$20.00$  but greater than  $-\$21.00$ . What could Stan's account balance be?

\_\_\_\_\_

\_\_\_\_\_

## Lesson Check (6.NS.7a, 6.NS.7b)

1. The low temperature was  $-1.8^{\circ}\text{C}$  yesterday and  $-2.1^{\circ}\text{C}$  today. Use the symbols  $<$  or  $>$  to show the relationship between the temperatures.
2. The scores at the end of a game are shown. List the scores in order from greatest to least.

Vince:  $-0.5$ , Allison:  $\frac{3}{8}$ , Mariah:  $-\frac{7}{20}$

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## Spiral Review (6.NS.1, 6.NS.4, 6.NS.6a, 6.NS.6c)

3. Simone bought 3.42 pounds of green apples and 2.19 pounds of red apples. She used 3 pounds to make a pie. How many pounds of apples are left?
4. Kwan bought three rolls of regular wrapping paper with 6.7 square meters of paper each. He also bought a roll of fancy wrapping paper containing 4.18 square meters. How much paper did he have altogether?

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5. Eddie needs  $2\frac{2}{3}$  cups of flour for one batch of pancakes. How much flour does he need for  $2\frac{1}{2}$  batches?
6. Tommy notices that he reads  $\frac{2}{3}$  page in a minute. At that rate, how long will it take him to read 12 pages?

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Name \_\_\_\_\_

## Absolute Value



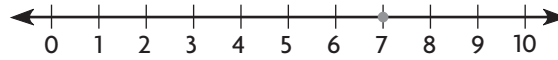
**COMMON CORE STANDARD—6.NS.7C**  
Apply and extend previous understandings of numbers to the system of rational numbers.

**Find the absolute value.**

1.  $|7|$  Graph 7 on the number line.

7 is 7 units from 0.

$|7| = \underline{7}$



2.  $|-8|$

3.  $|16|$

4.  $|-100|$

5.  $|0|$

6.  $|-5,000|$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7.  $|-15|$

8.  $|\frac{-1}{10}|$

9.  $|8.65|$

10.  $|\frac{43}{20}|$

11.  $|-0.06|$

\_\_\_\_\_

\_\_\_\_\_

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**Find all numbers with the given absolute value.**

12. 12

13. 1.7

14.  $\frac{3}{5}$

15.  $3\frac{1}{6}$

16. 0

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

**Find the number or numbers that make the statement true.**

17.  $|\square| = 17$

18.  $|\square| = 2.04$

19.  $|\square| = 1\frac{9}{10}$

20.  $|\square| = \frac{19}{24}$

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

## Problem Solving



21. Which two numbers are 7.5 units away from 0 on a number line?

\_\_\_\_\_

22. Emilio is playing a game. He just answered a question incorrectly, so his score will change by  $-10$  points. Find the absolute value of  $-10$ .

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## Lesson Check (6.NS.7c)

1. What is the absolute value of  $\frac{8}{9}$ ?
2. What two numbers have an absolute value of 21.63?

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## Spiral Review (6.NS.1, 6.NS.3, 6.NS.4, 6.NS.7b)

3. Rachel earned \$89.70 on Tuesday. She spent \$55.89 at the grocery store. How much money does she have left?
4. One carton contains  $\frac{17}{20}$  liter of juice. Another carton contains 0.87 liter of juice. Which carton contains the most?

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5. Maggie jogged  $\frac{7}{8}$  mile on Monday and  $\frac{1}{2}$  of that distance on Tuesday. How far did she jog on Tuesday?
6. Trygg has  $\frac{3}{4}$  package of marigold seeds. He plants  $\frac{1}{6}$  of those seeds in his garden and divides the rest equally into 10 flowerpots. What fraction of a package of seeds is planted in each flowerpot?

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Name \_\_\_\_\_

## Compare Absolute Values



**COMMON CORE STANDARD—6.NS.7D**  
Apply and extend previous understandings of numbers to the system of rational numbers.

### Solve.

1. Jamie scored  $-5$  points on her turn at a trivia game. In Veronica's turn, she scored more points than Jamie. Use absolute value to describe Veronica's score as a loss.

In this situation,  $|-5|$  represents a loss of 5 points. Veronica lost **fewer** than 5 points.

3. The table shows changes in the savings accounts of five students. Which student had the greatest increase in money? By how much did the student's account increase?

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2. The low temperature on Friday was  $-10^{\circ}\text{F}$ . The low temperature on Saturday was colder. Use absolute value to describe the temperature on Saturday as a temperature below zero.

The temperature on Saturday was \_\_\_\_\_ than 10 degrees below zero.

| Student | Account Change (\$) |
|---------|---------------------|
| Brett   | $-12$               |
| Destiny | $-36$               |
| Carissa | 15                  |
| Rylan   | 10                  |

### Compare. Write $<$ , $>$ , or $=$ .

4.  $-16$    $|-16|$

5.  $20$    $|20|$

6.  $3$    $|-4|$

7.  $|-12|$    $|-11|$

8.  $|25|$    $|27|$

9.  $|-9|$    $|9|$

## Problem Solving



10. On Wednesday, Miguel's bank account balance was  $-\$55$ . On Thursday, his balance was less than that. Use absolute value to describe Miguel's balance on Thursday as a debt.

In this situation,  $-\$55$  represents a debt of \_\_\_\_\_ . On Thursday, Miguel had a debt of \_\_\_\_\_ than  $\$55$ .

11. During a game, Naomi lost points. She lost fewer than 3 points. Use an integer to describe her possible score.

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## Lesson Check (6.NS.7d)

1. A temperature of  $-6^\circ$  is colder than a temperature of  $5^\circ\text{F}$  below zero. Is this statement true or false?
2. Long Beach, California has an elevation of  $-7$  feet. New Orleans, Louisiana is 8 feet below sea level. Which city has a lower elevation?

## Spiral Review (6.NS.1, 6.NS.3, 6.NS.4)

3. Dawn and Lin took off on skateboards from the same location but traveled in opposite directions. After 20 minutes, Dawn had traveled 6.42 kilometers and Lin had traveled 7.7 kilometers. How far apart were they?
4. Rico and Josh took off on skateboards going in the same direction. After 20 minutes, Rico had traveled 5.98 kilometers and Josh had gone 8.2 kilometers. How far apart were they?

5. Etta bought 11.5 yards of fabric selling for  $\$0.90$  per yard. What was the total cost?
6. Yen calculates the product  $\frac{5}{8} \times \frac{24}{25}$ . Before he multiplies, he simplifies all factors. What does the problem look like after he simplifies the factors?

Name \_\_\_\_\_

## Rational Numbers and the Coordinate Plane



**COMMON CORE STANDARD—6.NS.6C**  
Apply and extend previous understandings of numbers to the system of rational numbers.

Write the ordered pair for the point. Give approximate coordinates when necessary.

1. A

$(1, \frac{1}{2})$

\_\_\_\_\_

2. B

\_\_\_\_\_

3. C

\_\_\_\_\_

4. D

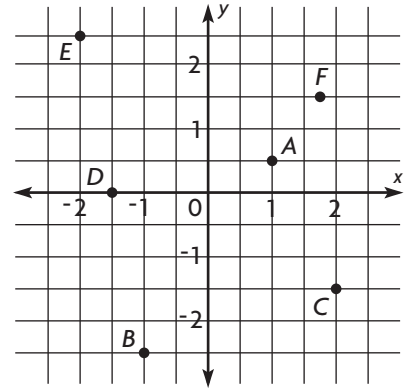
\_\_\_\_\_

5. E

\_\_\_\_\_

6. F

\_\_\_\_\_



Graph and label the point on the coordinate plane.

7.  $G(-\frac{1}{2}, 1\frac{1}{2})$

8.  $H(0, 2.50)$

9.  $J(-1\frac{1}{2}, \frac{1}{2})$

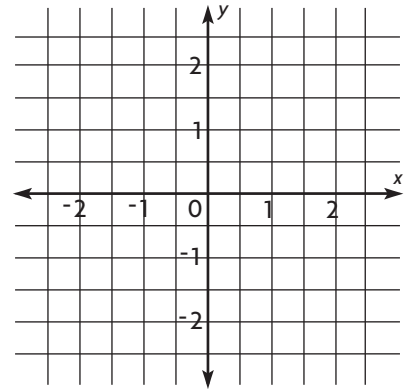
10.  $K(1, 2)$

11.  $L(-1\frac{1}{2}, -2\frac{1}{2})$

12.  $M(1, -0.5)$

13.  $N(\frac{1}{4}, 1\frac{1}{2})$

14.  $P(1.25, 0)$



## Problem Solving



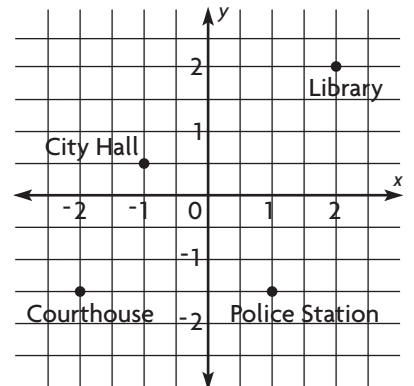
Use the map for 15–16.

15. What is the ordered pair for the city hall?

\_\_\_\_\_

16. The post office is located at  $(-\frac{1}{2}, 2)$ . Graph and label a point on the map to represent the post office.

Map of Elmwood



## Lesson Check (6.NS.6c)

1. An artist uses a coordinate plane to create a design. As part of the design, the artist wants to graph the point  $(-6.5, 2)$ . How should the artist graph this point?

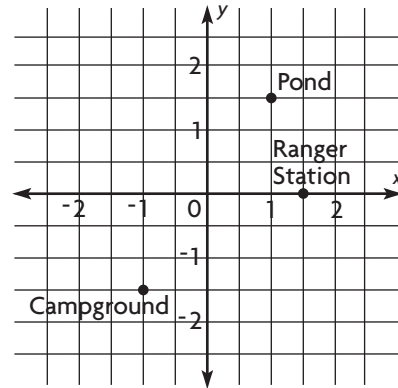
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2. What are the coordinates of the campground?



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## Spiral Review (6.NS.1, 6.NS.6c)

3. Four students volunteer at the hospital. Casey volunteers 20.7 hours, Danielle,  $20\frac{3}{4}$  hours, Javier  $18\frac{9}{10}$  hours, and Forrest,  $20\frac{18}{25}$  hours. Who volunteered the greatest number of hours?

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4. Directions for making a quilt say to cut fifteen squares with sides that are 3.625 inches long. What is the side length written as a fraction?

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5. Cam has a piece of plywood that is  $6\frac{7}{8}$  feet wide. He is going to cut shelves from the plywood that are each  $1\frac{1}{6}$  feet wide. Which is a good estimate for the number of shelves Cam can make?

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6. Zach has  $\frac{3}{4}$  hour to play video games. It takes him  $\frac{1}{12}$  hour to set up the system. Each round of his favorite game takes  $\frac{1}{6}$  hour. How many rounds can he play?

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Name \_\_\_\_\_

**Ordered Pair Relationships****COMMON CORE STANDARD—6.NS.6B***Apply and extend previous understandings of numbers to the system of rational numbers.***Identify the quadrant where the point is located.**1.  $(10, -2)$  Quadrant: **IV**      2.  $(-5, -6)$  Quadrant: \_\_\_\_\_      3.  $(3, 7)$  Quadrant: \_\_\_\_\_4.  $(-4, 9)$  Quadrant: \_\_\_\_\_      5.  $(8, -1)$  Quadrant: \_\_\_\_\_      6.  $(-11, 6)$  Quadrant: \_\_\_\_\_**The two points are reflections of each other across the  $x$ - or  $y$ -axis. Identify the axis.**7.  $(5, 3)$  and  $(-5, 3)$       8.  $(-7, 1)$  and  $(-7, -1)$       9.  $(-2, 4)$  and  $(-2, -4)$ 

axis: \_\_\_\_\_

axis: \_\_\_\_\_

axis: \_\_\_\_\_

**Give the reflection of the point across the given axis.**10.  $(-6, -10)$ ,  $y$ -axis11.  $(-11, 3)$ ,  $x$ -axis12.  $(8, 2)$ ,  $x$ -axis

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Problem Solving**13. A town's post office is located at the point  $(7, 5)$  on a coordinate plane. In which quadrant is the post office located?

\_\_\_\_\_

14. The grocery store is located at a point on a coordinate plane with the same  $y$ -coordinate as the bank but with the opposite  $x$ -coordinate. The grocery store and bank are reflections of each other across which axis?

\_\_\_\_\_

## Lesson Check (6.NS.6b)

1. In which quadrant does the point  $(-4, 15)$  lie?
2. What are the coordinates of the point  $(10, -4)$  if it is reflected across the  $y$ -axis?

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## Spiral Review (6.NS.1, 6.NS.3)

3. Small juice bottles come in packages of 6. Yogurt treats come in packages of 10. Paula wants to have the exact same number of each item. How many bottles of juice and individual yogurt treats will she have altogether? How many packages of each will she need?
4. Alison saves \$29.26 each month. How many months will it take her to save enough money to buy a stereo for \$339.12?

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5. The library is 1.75 miles directly north of the school. The park is 0.6 miles directly south of the school. How far is the library from the park?
6. Tours of the art museum are offered every  $\frac{1}{3}$  hour starting at 10 A.M. The museum closes at 4:00 P.M. How many tours are offered each day?

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Name \_\_\_\_\_

## Distance on the Coordinate Plane



**COMMON CORE STANDARD—6.NS.8**  
Apply and extend previous understandings of numbers to the system of rational numbers.

Find the distance between the pair of points.

1.  $(1, 4)$  and  $(-3, 4)$

$|1| = 1; |-3| = 3;$

$1 + 3 = 4$

4 units

2.  $(7, -2)$  and  $(11, -2)$

\_\_\_\_\_ units

3.  $(6, 4)$  and  $(6, -8)$

\_\_\_\_\_ units

4.  $(8, -10)$  and  $(5, -10)$

\_\_\_\_\_ units

5.  $(-2, -6)$  and  $(-2, 5)$

\_\_\_\_\_ units

6.  $(-5, 2)$  and  $(-5, -4)$

\_\_\_\_\_ units

Write the coordinates of a point that is the given distance from the given point.

7. 5 units from  $(-1, -2)$

$(\square, -2)$

10. 6 units from  $(4, -1)$

$(4, \square)$

8. 8 units from  $(2, 4)$

$(2, \square)$

11. 10 units from  $(-1, 9)$

$(\square, 9)$

9. 3 units from  $(-7, -5)$

$(-7, \square)$

12. 7 units from  $(-3, 2)$

$(\square, 2)$

### Problem Solving



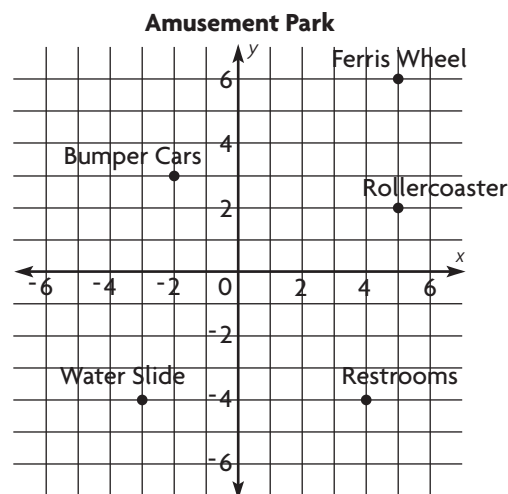
The map shows the locations of several areas in an amusement park. Each unit represents 1 kilometer.

13. How far is the Ferris wheel from the rollercoaster?

\_\_\_\_\_

14. How far is the water slide from the restrooms?

\_\_\_\_\_



## Lesson Check (6.NS.8)

1. What is the distance between  $(4, -7)$  and  $(-5, -7)$ ?
2. Point A and point B are 5 units apart. The coordinates of point A are  $(3, -9)$ . The  $y$ -coordinate of point B is  $-9$ . What is a possible  $x$ -coordinate for point B?

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## Spiral Review (6.NS.1, 6.NS.6b, 6.NS.6c, 6.NS.7b)

3. An apple is cut into 10 pieces. 0.8 of the apple is eaten. Which fraction, in simplest form, represents the amount of apple that is left?
4. A carton contains soup cans weighing a total of 20 pounds. Each can weighs  $1\frac{1}{4}$  pounds. How many cans does the carton contain?

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5. List  $-1$ ,  $\frac{1}{4}$ , and  $-1\frac{2}{3}$  in order from greatest to least.
6. The point located at  $(3, -1)$  is reflected across the  $y$ -axis. What are the coordinates of the reflected point?

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Name \_\_\_\_\_

### Problem Solving • The Coordinate Plane



**COMMON CORE STANDARD—6.NS.8**  
*Apply and extend previous understandings of numbers to the system of rational numbers.*

Read each problem and solve.

1. On a coordinate map of Clifton, an electronics store is located at  $(6, -7)$ . A convenience store is located 7 units north of the electronics store on the map. What are the map coordinates of the convenience store?

                      
                      
**(6, 0)**  
                      
                    

2. Sonya and Lucas walk from the school to the library. They walk 5 blocks south and 4 blocks west to get to the library. If the school is located at a point  $(9, -1)$  on a coordinate map, what are the map coordinates of the library?

3. On a coordinate map, Sherry's house is at the point  $(10, -2)$  and the mall is at point  $(-4, -2)$ . If each unit on the map represents one block, what is the distance between Sherry's house and the mall?

4. Arthur left his job at  $(5, 4)$  on a coordinate map and walked to his house at  $(5, -6)$ . Each unit on the map represents 1 block. How far did Arthur walk?

5. A fire station is located 2 units east and 6 units north of a hospital. If the hospital is located at a point  $(-2, -3)$  on a coordinate map, what are the coordinates of the fire station?

6. Xavier's house is located at the point  $(4, 6)$ . Michael's house is 10 blocks west and 2 blocks south of Xavier's house. What are the coordinates of Michael's house?

7. On a coordinate map, a pizzeria is located at  $(9, 3)$ . A pizza is being delivered to a house located at  $(9, -3)$ . Each unit represents 1 mile. How far is the pizzeria from the house?

## Lesson Check (6.NS.8)

1. The points  $(-4, -4)$ ,  $(-4, 4)$ ,  $(4, 4)$ , and  $(4, -4)$  form a square on a coordinate plane. How long is a side length of the square?
2. On a coordinate map, the museum is located at  $(-5, 7)$ . A park is located 6 units to the right of the museum on the map. What are the coordinates of park?

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## Spiral Review (6.NS.1, 6.6.NS.6c, 6.NS.8)

3. On a grid Joe's house is marked at  $(-5, -3)$  and Andy's house is marked at  $(1, -3)$ . What is the distance, on the grid, between Joe's house and Andy's house?
4. In the last two years, Mari grew  $2\frac{1}{4}$  inches, Kim grew 2.4 inches, and Kate grew  $2\frac{1}{8}$  inches. Write the amounts they grew in order from least to greatest.

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5. A jar of jelly that weighs 4.25 ounces costs \$2.89. What is the cost of one ounce of jelly?
6. Jan began with  $\frac{5}{6}$  pound of modeling clay. She used  $\frac{1}{5}$  of the clay to make decorative magnets. She divided the remaining clay into 8 equal portions. What is the weight of the clay in each portion?

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