4-9

## Lesson Reading Guide

## Algebra: Ordered Pairs and Functions

## Get Ready for the Lesson

Read the introduction at the top of page 233 in your textbook. Write your answers below.

- **1.** How is the map labeled?
- 2. Location C5 is closest to the end of which street?
- 3. Identify where Cedar Court and Juniper Lane intersect on the map.

### **Read the Lesson**

4. What is an ordered pair? Write three examples.

- 5. What definition does a dictionary give for the word *origin*?
- **6.** How does this definition of origin relate to the meaning of the word in terms of a coordinate plane?

### **Remember What You Learned**

7. Work with a partner. Have one of you plot a point on a coordinate plane, without showing your partner the point. Have your partner guess the location of the point. Without giving them the exact location, give them a hint of which direction they need to move to guess your point. Continue with a guess and a hint until your partner names the correct point. Then exchange roles and see who can name the point in the fewest number of guesses.

Lesson 4–9

NAME

## **Study Guide and Intervention**

Algebra: Ordered Pairs and Functions

A coordinate plane is formed when two number lines intersect at their zero points. This intersection is called the origin. The horizontal number line is called the x-axis. The vertical number line is called the y-axis.

An ordered pair is used to name a point on a coordinate plane. The first number in the ordered pair is the *x*-coordinate, and the second number is the *y*-coordinate.

#### Example 1 Write the ordered pair that names point A.

Start at the origin. Move right along the *x*-axis until you are under point *A*. The *x*-coordinate is 4.

Then move up until you reach point *A*. The *y*-coordinate is 1.

So, point A is named by the ordered pair (4, 1).

#### Example 2

4-9

#### Graph the point W(2, 4).

Start at the origin. Move 2 units to the right along the *x*-axis.

Then move 4 units up to locate the point. Draw a dot and label the point W.

#### Exercises

Use the coordinate plane at the right to name the ordered pair for each point.

1. J

2. K

3. L

**4.** *M* 

#### Graph and label each point on the coordinate plane.

**5.** S(1, 3)

ò	, 1	1 2	3 4	1 5	5 6	57	7 8	3 <b>x</b>
2								
-4								
-5								
-6								
-7								
	y							

6. T(4, 0)

	y							
-8.								
-7								
-6								
-5								
-4								
2								
-0-								
-2								
-1								
+		<u> </u>	<u> </u>	Ļ	_	 	<u> </u>	-



	y.								
-0-									
- / -									
-6-									
-5-			и	/					-
-4	-			, 					<u> </u>
-3-		4	<u> </u>						
-2-									
-1-									
_									
0	, .	1 2	2 3	3 4	45	5 6	3 7	7 8	3 x
							_		



4-9

PERIOD

## Algebra: Ordered Pairs and Functions



### Graph and label each point on the coordinate plane.



õ

Lesson 4–9

-1 0

1

2 3 4 5 6 7 8 x

Ż

3

4 **x** 

-1

0

2 3 4 **x** 

Chapter 4

### Course 1

#### NAME

4-9

## **Practice**

## Algebra: Ordered Pairs and Functions

Use the coordinate plane at the right to name the ordered pair for each point.

<b>1.</b> A	<b>2.</b> <i>B</i>
<b>3.</b> C	<b>4.</b> D
<b>5.</b> <i>F</i>	<b>6.</b> G
<b>7.</b> <i>H</i>	<b>8.</b> J
<b>9.</b> <i>K</i>	<b>10.</b> <i>M</i>

#### Graph and label each point on the coordinate plane at the right.

<b>11.</b> N (4, 3)	<b>12.</b> <i>P</i> (0, 4)
<b>13.</b> $R(2, 4\frac{1}{2})$	<b>14.</b> $S(1\frac{3}{4}, 2)$
<b>15.</b> <i>T</i> (2.75, 4)	<b>16.</b> <i>W</i> (3, 1.5)
<b>17.</b> $A(4\frac{1}{4}, 1)$	<b>18.</b> $B(1, 3\frac{3}{4})$

#### CAR WASH For Exercises 19 and 20, use the following information.

A car wash can wash four cars in one hour. The table shows the total number of cars washed in 0, 1, 2, and 3 hours.

Hours	0	1	2	3
Cars Washed	0	4	8	12

**19.** List this information as ordered pairs (number of hours, number of cars washed).

62

- **20.** Graph the ordered pairs on the coordinate plane at the right. Then describe the graph.
- **21. GEOMETRY** A square drawn on a coordinate plane has the following ordered pairs: (2, 2.5), (2, 6.5), and (6, 2.5). What is the ordered pair of the fourth point?

ò	-	1	2	2	3	}	2	1 x
4-								
0								
8								
2								
-	-							
6	y							

1	y							
4								
2								
3								
0								
2								
1								
1								
ò		1	2	2	3	3	4	x



DATE \_\_\_\_\_ PERIOD

NAME

4-9

# Word Problem Practice

## Algebra: Ordered Pairs and Functions

<b>PHOTOGRAPHY</b> A phot black and white film. ' rolls of black and whit	ography store sells The cost of 1, 2, and 3 te film are shown in	<b>EXERCISE</b> The table she Quentin to jog 1, 2, 3, a the track.	ows the and 4 la	time ps ar	it ta oun	akes d	
	ta Film Casta	Number of Times		-	,	• 、	
Black and Wh	Cost (¢)	Around Track	Total '	Time	e (m	in)	
Number of Rolls	Cost (\$)			5			
1	4	2		10			
2	8	3		15			
3	12	4		20			
<ol> <li>List this information (number of rolls of rolls of rolls of rolls of the graph the ordered the graph.</li> </ol>	on as ordered pairs film, cost). pairs. Then describe	<ol> <li>List this information (number of times a time).</li> <li>Graph the ordered the graph.</li> </ol>	on as ord round tr pairs. T	lered rack,	l pai tota lesci	rs l	
<b>FOOTBALL</b> In football, scores 3 points. The ta relationship.	each field goal made ble shows this	JEWELRY The table gives the number of beads needed to make bracelets of lengths 7, 7.5, 8, and 8.5 inches.					
Field Goals Made	Total Points	Bracelet Length (in	<b>n.</b> ) 7	7.5	8	8.5	
0	0	Number of Beads	28	30	32	34	
1	3	7 List this information	n as or	lered	nai	rq	
2	6	(bracelet length nu	mber of	f hear	ds)	15	
3	9	(**************************************					
<ul><li>5. List this information (field goals made, the graph the ordered the graph.</li></ul>	on as ordered pairs total points). pairs. Then describe	8. Graph the ordered the graph.	pairs. T	hen d	lesci	ribe	

Lesson 4–9

NAME

4-9

## Enrichment

## **Investigating Coordinate Grids**

You can use coordinate grids to display sets of ordered pairs. You can also find new ordered pairs by looking at the line that the plotted ordered pairs make.

The table below lists the cost of tickets to a play. The data from the table are plotted on the grid.

Number of Tickets	<b>Total Cost</b>
2	\$10.00
4	\$20.00
6	\$30.00
8	\$40.00

10	y								1
40° 25									
30. 20									
00. 05									
20.					/				
20 15									
10			/						
10									
9.									
Ò	, 1	2	2 3	3 4	1 5	5 6	57	7 8	3 <b>x</b>

The table shows the cost of 2, 4, 6, and 8 tickets. To find the cost of 5 tickets, you can use the grid to find the ordered pair that fits the table.

- Start at the origin and move to 5 on the *x*-axis. This is the *x*-coordinate.
- Move up until you meet the line. Then follow across to the left to the *y*-axis to find the corresponding *y*-coordinate. The value is 25.
- The ordered pair is (5, 25). This ordered pair means 5 tickets cost \$25.

EXERCISES Use the data plotted on the coordinate grid to answer the questions.

Time (in hours)	Distance
2	240
3	360
5	600
8	960

800.	y						1		
7000									
/00-									H
600-	-	-	-			<b>/</b> _	-		$\vdash$
500-				_	$\checkmark$				
400-				$\checkmark$	<u> </u>				
300-				_					
200-			r						
100-									
_									
0	, '	2	23	3 4	15	5 6	57	78	3 <b>x</b>

- 1. How many miles did the airplane travel in 1 hour?
- 2. How many miles did the airplane travel in 2 hours?
- 3. How many miles did the airplane travel in 5 hours?
- 4. How long did it take the airplane to travel 720 miles?
- 5. How long did it take the airplane to travel 360 miles?