

Lesson 14-3

Monday, April 27, 2020 9:07 AM

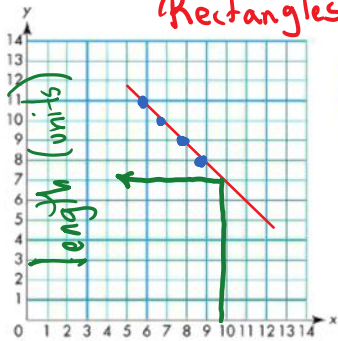
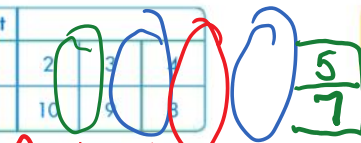
Name _____



Solve & Share

The table below uses number patterns to describe changes in the width and length of a rectangle. Let x be the width and y be the length. Then plot each of the four ordered pairs in the table on the coordinate grid. What do you think the length is if the width is 5?

	Rule	Start	2	3	4
Width	Add 1	1	2	3	4
Length	Subtract 1	11	10	9	8



Rectangles

Model with Math
You can make a graph to help solve the problem.
Show your work!



Lesson 14-3

Solve Problems Using Ordered Pairs

I can ...
solve real-world problems by graphing points.

Content Standards 5.G.A.1, 5.G.A.2
Mathematical Practices MP.4, MP.6, MP.7

Look Back! **MP.7 Look for Relationships** What pattern do the points form on your graph?

The points form a straight line.

How Can You Use Ordered Pairs to Solve Problems?

A

Both Ann and Bill earn the amount shown each week. Ann starts with no money, but Bill starts with \$5. How much will Bill have when Ann has \$30? Represent this situation using a table and a graph.



B

Make a table showing how much money Ann and Bill have after each week.

Week	Start	1	2	3	4	5
Ann's earnings in \$	0	3	6	9	12	15
Bill's earnings in \$	5	8	11	14	17	20

Let x = Ann's earnings and y = Bill's earnings.

C

Plot the ordered pairs from the table. Draw a line to show the pattern. Extend your line to the point where the x-coordinate is 30. The corresponding y-coordinate is 35.



So, Bill has \$35 when Ann has \$30.

Convince Me! **MP.7 Look for Relationships** What is the relationship between Bill's earnings and Ann's earnings?

Bill always has \$5 more than Ann.
 Ann always has \$5 less than Bill.

☆ Guided Practice

Do You Understand?

1. In the example on page 790, find another point on the line. What does this point represent?

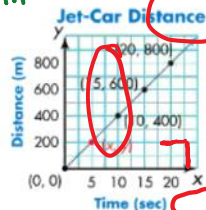
$(20, 25)$ Ann has \$20 and Bill has \$25.

2. **Algebra** In the example on page 790, write an equation to show the relationship between Ann's earnings and Bill's earnings. Remember to let x = Ann's earnings and y = Bill's earnings.

$y = x + 5$ or $x = y - 5$

Do You Know How?

Write the missing coordinates and tell what the point represents.



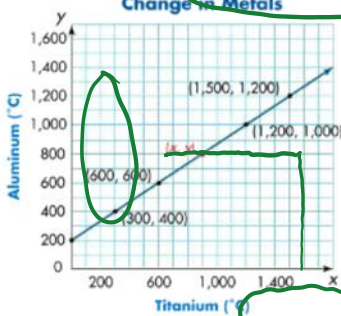
$(5, 200)$ In 5 sec. a jet car can go 200 m.

☆ Independent Practice

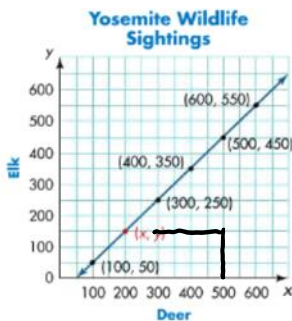
In 4 and 5, find the missing coordinates and tell what the point represents.

Complete 5, 7, 8, 9 & 11

4. **Comparing Temperature Change in Metals** 5.



$(900, 800)$ When Titanium is 900°C , Aluminum is 800°C .



$(200, 150)$ When there are 200 deer sightings, there are 150 elk sightings.

6. For Exercise 5, find two other points on the line. Then graph and label them. Describe the relationship between deer sightings and elk sightings.

*For another example, see Set B on page 803.

Math Practices and Problem Solving

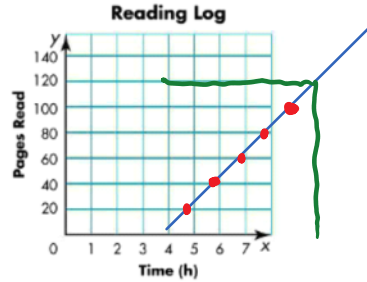
In 7 and 8, use the table at the right.

Reading Log					
Time (h)	1	2	3	4	5
Pages Read	20	40	60	80	100

7. Graph the points in the table on the grid at the right. Then draw a line through the points.

8. **MP.7 Look for Relationships** If the pattern continues, how many pages will have been read after 6 hours? Extend your graph to solve.

120 pages



9. **Higher Order Thinking** Suppose you have a graph of speed that shows a lion can run four times as fast as a squirrel. Name an ordered pair that shows this relationship. What does this ordered pair represent?

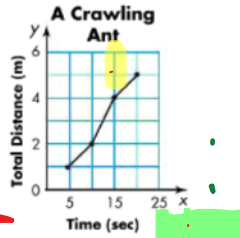
$(1, 4)$ $(3, 12)$ When a squirrel runs 1 ft/h,
 $(2, 8)$ $(4, 16)$ the lion runs 192 mph

10. **Number Sense** Candace drives a total of 48 miles each day to get to work and back home. She works 5 days a week. Her car gets 21 miles per gallon of gas. About how many gallons of gas does she need to drive to work and back home each week?

Common Core Assessment

11. What does the point (15, 4) represent on the graph at the right?

- (A) The ant crawled 15 meters in 19 seconds.
- (B) The ant crawled 15 meters in 4 seconds.
- (C) The ant crawled 4 meters in 19 seconds.
- (D) The ant crawled 4 meters in 15 seconds.



12. What does the point (20, 5) represent on the graph?

- (A) In 20 seconds, the ant crawled 5 centimeters.
- (B) In 20 seconds, the ant crawled 5 meters.
- (C) In 5 seconds, the ant crawled 20 meters.
- (D) In 5 seconds, the ant crawled 15 meters.