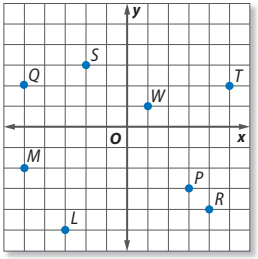
Guided Practice

Check

Name the ordered pair for each point graphed at the right. (Example 1)



1. Q **(−5, 2)**
2. P **(3, −3)**
3. T **(5, 2)**
4. M **(−5, −2)**

5–8. See Answer Appendix for graph.

Graph and label each point on a coordinate plane. Name the quadrant in which each point is located. (Example 2)

5. $A(-2, 3)$ **II**
6. $B(4, -1)$ **IV**
7. $C(-3, -2)$ **III**
8. $D(0, -5)$ **None**

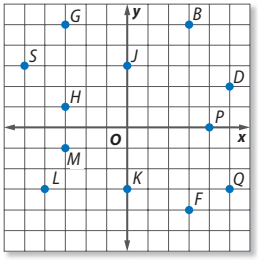
9. CCSS **Model with Mathematics** The difference of two temperatures is 4°F. If x represents the first temperature and y represents the second temperature, make a table of possible values for x and y. Graph the ordered pairs and describe the graph. (Example 3) **See Answer Appendix.**

Independent Practice

eHelp

Go online for Step-by-Step Solutions

Name the ordered pair for each point graphed at the right. (Example 1)



10. S **(−5, 3)**
11. H **(−3, 1)**
12. D **(5, 2)**
13. B **(3, 5)**
14. M **(−3, −1)**
15. L **(−4, −3)**
16. F **(3, −4)**
17. Q **(5, −3)**
18. K **(0, −3)**
19. J **(0, 3)**

Graph and label each point on a coordinate plane. Name the quadrant in which each point is located. (Example 2) **20–31. See Answer Appendix for graph.**

20. $Z(-1, 1)$ **II**
21. $Y(-2, 3)$ **II**
22. $X(5, 6)$ **I**
23. $W(6, 2)$ **I**
24. $V(-1, -6)$ **III**
25. $S(2, -1)$ **IV**
26. $T(-5, 0)$ **none**
27. $R(0, -4)$ **none**
28. $P(-4, 5)$ **II**
29. $Q(-3, 3)$ **II**
30. $N(1, -1)$ **IV**
31. $K(5, -3)$ **IV**

32. CCSS **Model with Mathematics** After two plays, the Wildcats gained a total of 16 yards. If x represents the number of yards for play one, and y represents the number of yards for play two, make a table of possible values for x and y. Graph the ordered pairs and describe the graph. (Example 3) **32–33. See Answer Appendix.**

33. CCSS **Model with Mathematics** The distance between two runners in a race is 10 feet. If x represents the position of one runner in relation to a water stop and y represents the position the second runner, make a table of possible values for x and y. Graph the ordered pairs and describe the graph. (Example 3)

B CCSS **Persevere with Problems** **Name the quadrant in which each point lies.**

34. $A(5, |-6|)$ **I**
35. $E(|-5|, -3)$ **IV**
36. $J(x, y)$ if $x < 0, y > 0$ **II**
37. $U(x, y)$ if $x > 0, y < 0$ **IV**

38. Consider the points $A(-4, 3)$, $B(1, 3)$, $C(1, 2)$, and $D(-4, 2)$. **38–39. See Answer Appendix.**

a. Graph the points on a coordinate plane and connect them to form a rectangle.

b. Add 4 to the x-coordinate of each ordered pair and redraw the figure.

c. Compare the two rectangles.

39 **STEM** The table shows temperatures in degrees Celsius and the corresponding temperatures in degrees Fahrenheit. Graph the ordered pairs (°Celsius, °Fahrenheit) to show the relationship between degrees Celsius and degrees Fahrenheit.

Celsius	−10	−5	0	5	10
Fahrenheit	14	23	32	41	50

40. **Financial Literacy** The table shows the balance on a $50 music card after a certain number of songs have been downloaded.

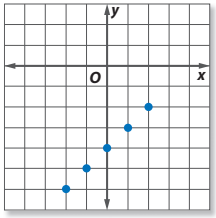
Songs Downloaded	Balance ($)
0	50
5	45
10	40
15	35

a. Make a graph to show how the number of songs downloaded and the remaining balance are related. **See Answer Appendix.**

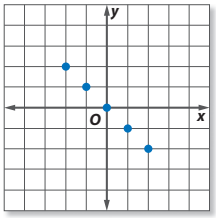
b. Use your graph to find the balance on the card after 25 songs have been downloaded. **$25**

For each graph, create a table showing the rule and the values for x and y.

41.



42.



41-46. See Answer Appendix.

Graph and label each point on a coordinate plane.

43. $A(-6.5, 3)$ **44.** $B(-2, -5.75)$ **45.** $C(4.1, -1)$ **46.** $D(-3.4, 1.5)$

H.O.T. Problems Higher Order Thinking

47. CCSS **Identify Structure** Write the coordinates of a point located in quadrant II. **Sample answer: (−3, 1)**

48. CCSS **Persevere with Problems** The product of two numbers is 12. **See Answer Appendix.**

a. Make a table using −3, −2, −1, 1, 2, and 3 as x values.

b. Graph the ordered pairs. Compare and contrast this graph with the one in Example 3.

49. CCSS **Persevere with Problems** Determine whether each statement is *always*, *sometimes*, or *never* true. Explain or give a counterexample to support your answer.

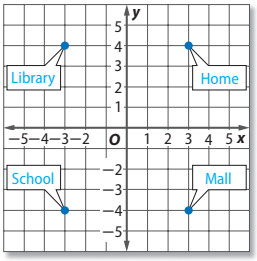
a. Both x- and y-coordinates of a point in quadrant I are negative.
Sample answer: Never; both coordinates are positive.

b. The x-coordinate of a point that lies on the x-axis is negative.
Sample answer: Sometimes; both (−2, 0) and (2, 0) lie on the x-axis.

50. **Building on the Essential Question** How does the location of the points (−7, 8) and (8, −7) change if you multiply each of the coordinates in each ordered pair by −1? Explain your reasoning to a classmate. **See Answer Appendix.**

Standardized Test Practice

51. Which point on the graph best represents the location of the library? **C**



A (3, 4) **C** (−3, 4)

B (−3, −4) **D** (3, −4)

52. What building is located at point (−3, −4) on the graph above? **F**

F School **H** Library

G Mall **J** Home

53. In which quadrant on the coordinate plane is point (2, −3)? **D**

A quadrant I

B quadrant II

C quadrant III

D quadrant IV

54. **Short Response** Juan wants to rent 4 DVDs. Each DVD costs $3 for two days. Complete the table to show his total cost for the number of days given.

Number of Days	Total Cost ($)
2	■ **12**
4	■ **24**
6	■ **36**

Common Core Review

Find each quotient. 7.NS.2b

55. $-27 \div (-9)$ **3**

56. $-77 \div 7$ **−11**

57. $-300 \div 6$ **−50**

58. STEM A glacier was receding at a rate of 300 feet per day. What is the glacier's movement in 5 days? (*Hint*: The word *receding* means *moving backward*.) 7.NS.2a **−1500 ft**

59. Lincoln High School's swim team finished the 4 × 100-meter freestyle relay in 5 minutes 18 seconds. Prospect High School's swim team finished the race in 5 minutes 7 seconds. Write an integer that represents Lincoln's finish compared to Prospect's finish. 7.NS.1c **−11 s**

Evaluate each expression. 7.NS.1

60. $|-9-1|$ **10**

61. $|10|-|-4|$ **6**

62. $|16|+|-5|$ **21**

Find each sum. 7.NS.1

63. $-85+15$ **−70**

64. $-13+(-8)$ **−21**

65. $-10+12$ **2**

Evaluate each expression if $a=-5$, $b=4$, and $c=-9$. 7.NS.1, 7.NS.2

66. $4a+c$ **−29**

67. $4b+c$ **7**

68. $-b+2a$ **−14**

69. $-b-2a$ **6**

70. $a(b+c)$ **25**

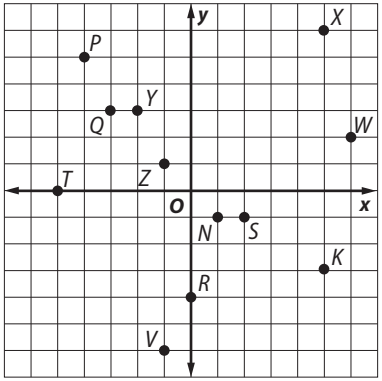
71. $a(b-c)$ **−65**

72. $|a-b|$ **9**

73. $4a \div (5b)$ **−1**

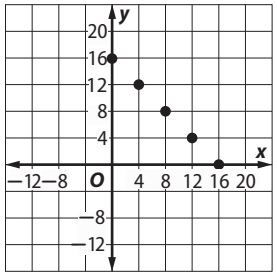
74. $(c-a)\cdot(a-c)$ **−16**

20–31.



32. Sample answer:

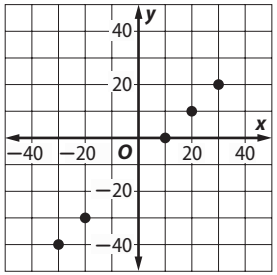
$x + y = 16$		
x	y	(x, y)
0	16	(0, 16)
4	12	(4, 12)
8	8	(8, 8)
12	4	(12, 4)
16	0	(16, 0)



The points on the graph are in a line. The line crosses the y-axis at $y = 16$ and the x-axis at $x = 16$.

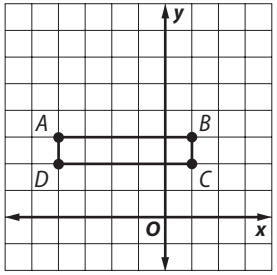
33. Sample answer:

$x - y = 10$		
x	y	(x, y)
30	20	(30, 20)
20	10	(20, 10)
10	0	(10, 0)
−20	−30	(−20, −30)
−30	−40	(−30, −40)

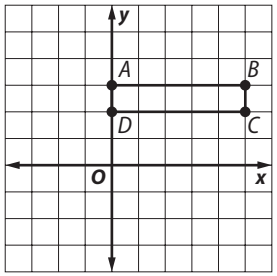


The points on the graph are in a line that slants downward to the left. The line crosses the x-axis at $x = 10$.

38a.

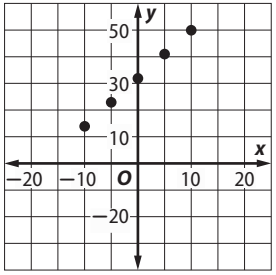


38b. $A(0, 3)$, $B(5, 3)$, $C(5, 2)$, $D(0, 2)$

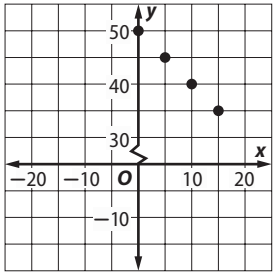


38c. Sample answer: The shape and size of the rectangles are the same. The 2nd rectangle is 4 units to the right of the first rectangle.

39.



40a.



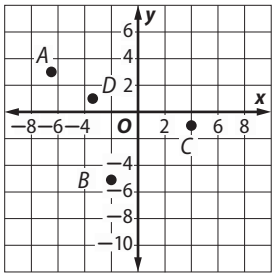
41.

$y = x - 4$		
x	y	(x, y)
−2	−6	(−2, −6)
−1	−5	(−1, −5)
0	−4	(0, −4)
1	−3	(1, −3)
2	−2	(2, −2)

42.

$x + y = 0$		
x	y	(x, y)
−2	2	(−2, 2)
−1	1	(−1, 1)
0	0	(0, 0)
1	−1	(1, −1)
2	−2	(2, −2)

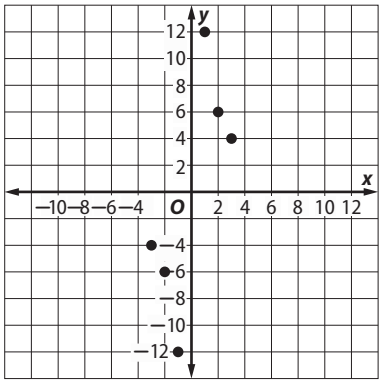
43–46.



48a.

$xy = 12$		
x	y	(x, y)
−3	−4	(−3, −4)
−2	−6	(−2, −6)
−1	−12	(−1, −12)
1	12	(1, 12)
2	6	(2, 6)
3	4	(3, 4)

48b.



In Example 3, the points lie on a straight line. In this graph, the points do not lie on a straight line.

50. The location of point (−7, 8) would move from quadrant II to quadrant IV, and the location of point (8, −7) would move from quadrant IV to quadrant II. When each coordinate is multiplied by −1, the location of the point is in the opposite direction from the origin for both the *x*- and *y*-coordinates.