4.1 EXERCISES

Practice Makes Perfect

Plot Points in a Rectangular Coordinate System

In the following exercises, plot each point in a rectangular coordinate system and identify the quadrant in which the point is located.

1.

ⓐ $(-4, 2)$

ⓑ $(-1, -2)$

ⓒ $(3, -5)$

ⓓ $(-3, 5)$

ⓔ $\left(\frac{5}{3}, 2\right)$

2.

ⓐ $(-2, -3)$

ⓑ $(3, -3)$

ⓒ $(-4, 1)$

ⓓ $(4, -1)$

ⓔ $\left(\frac{3}{2}, 1\right)$

3.

ⓐ $(3, -1)$

ⓑ $(-3, 1)$

ⓒ $(-2, 2)$

ⓓ $(-4, -3)$

ⓔ $\left(1, \frac{14}{5}\right)$

4.

ⓐ $(-1, 1)$

ⓑ $(-2, -1)$

ⓒ $(2, 1)$

ⓓ $(1, -4)$

ⓔ $\left(3, \frac{7}{2}\right)$

In the following exercises, plot each point in a rectangular coordinate system.

5.

ⓐ $(-2, 0)$

ⓑ $(-3, 0)$

ⓒ $(0, 0)$

ⓓ $(0, 4)$

ⓔ $(0, 2)$

6.

ⓐ $(0, 1)$

ⓑ $(0, -4)$

ⓒ $(-1, 0)$

ⓓ $(0, 0)$

ⓔ $(5, 0)$

7.

ⓐ $(0, 0)$

ⓑ $(0, -3)$

ⓒ $(-4, 0)$

ⓓ $(1, 0)$

ⓔ $(0, -2)$

8.

ⓐ $(-3, 0)$

ⓑ $(0, 5)$

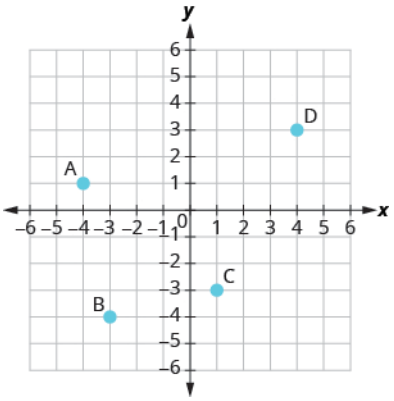
ⓒ $(0, -2)$

ⓓ $(2, 0)$

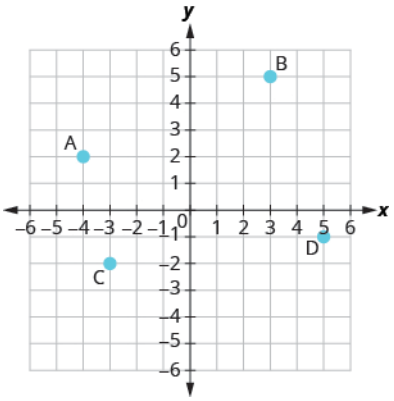
ⓔ $(0, 0)$

In the following exercises, name the ordered pair of each point shown in the rectangular coordinate system.

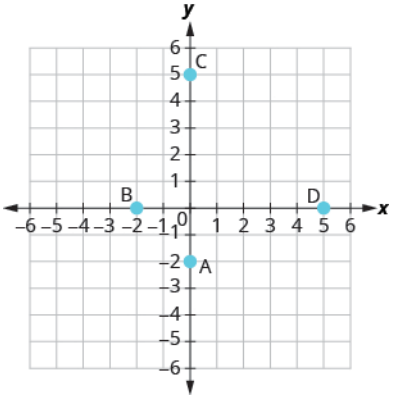
9.



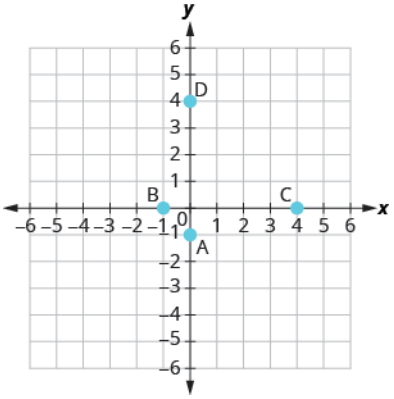
10.



11.



12.



Verify Solutions to an Equation in Two Variables

In the following exercises, which ordered pairs are solutions to the given equations?

13. $2x + y = 6$

ⓐ $(1, 4)$

ⓑ $(3, 0)$

ⓒ $(2, 3)$

14. $x + 3y = 9$

ⓐ $(0, 3)$

ⓑ $(6, 1)$

ⓒ $(-3, -3)$

15. $4x - 2y = 8$

ⓐ $(3, 2)$

ⓑ $(1, 4)$

ⓒ $(0, -4)$

16. $3x - 2y = 12$

ⓐ $(4, 0)$

ⓑ $(2, -3)$

ⓒ $(1, 6)$

17. $y = 4x + 3$

ⓐ $(4, 3)$

ⓑ $(-1, -1)$

ⓒ $\left(\frac{1}{2}, 5\right)$

18. $y = 2x - 5$

ⓐ $(0, -5)$

ⓑ $(2, 1)$

ⓒ $\left(\frac{1}{2}, -4\right)$

19. $y = \frac{1}{2}x - 1$

ⓐ $(2, 0)$

ⓑ $(-6, -4)$

ⓒ $(-4, -1)$

20. $y = \frac{1}{3}x + 1$

ⓐ $(-3, 0)$

ⓑ $(9, 4)$

ⓒ $(-6, -1)$

Complete a Table of Solutions to a Linear Equation

In the following exercises, complete the table to find solutions to each linear equation.

21. $y = 2x - 4$

x	y	(x, y)
0		
2		
−1		

22. $y = 3x - 1$

x	y	(x, y)
0		
2		
−1		

23. $y = -x + 5$

x	y	(x, y)
0		
3		
−2		

24. $y = -x + 2$

x	y	(x, y)
0		
3		
−2		

25. $y = \frac{1}{3}x + 1$

x	y	(x, y)
0		
3		
6		

26. $y = \frac{1}{2}x + 4$

x	y	(x, y)
0		
2		
4		

27. $y = -\frac{3}{2}x - 2$

x	y	(x, y)
0		
2		
−2		

28. $y = -\frac{2}{3}x - 1$

x	y	(x, y)
0		
3		
−3		

29. $x + 3y = 6$

x	y	(x, y)
0		
3		
	0	

30. $x + 2y = 8$

x	y	(x, y)
0		
4		
	0	

31. $2x - 5y = 10$

x	y	(x, y)
0		
10		
	0	

32. $3x - 4y = 12$

x	y	(x, y)
0		
8		
	0	

Find Solutions to a Linear Equation

In the following exercises, find three solutions to each linear equation.

33. $y = 5x - 8$

34. $y = 3x - 9$

35. $y = -4x + 5$

36. $y = -2x + 7$

37. $x + y = 8$

38. $x + y = 6$

39. $x + y = -2$

40. $x + y = -1$

41. $3x + y = 5$

42. $2x + y = 3$

43. $4x - y = 8$

44. $5x - y = 10$

45. $2x + 4y = 8$

46. $3x + 2y = 6$

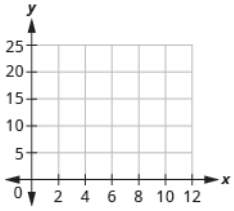
47. $5x - 2y = 10$

48. $4x - 3y = 12$

Everyday Math

49. Weight of a baby. Mackenzie recorded her baby's weight every two months. The baby's age, in months, and weight, in pounds, are listed in the table below, and shown as an ordered pair in the third column.

ⓐ Plot the points on a coordinate plane.

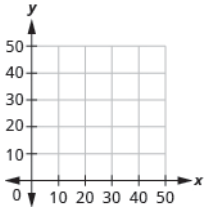


ⓑ Why is only Quadrant I needed?

Age x	Weight y	(x, y)
0	7	(0, 7)
2	11	(2, 11)
4	15	(4, 15)
6	16	(6, 16)
8	19	(8, 19)
10	20	(10, 20)
12	21	(12, 21)

50. Weight of a child. Latresha recorded her son's height and weight every year. His height, in inches, and weight, in pounds, are listed in the table below, and shown as an ordered pair in the third column.

ⓐ Plot the points on a coordinate plane.



ⓑ Why is only Quadrant I needed?

Height x	Weight y	(x, y)
28	22	(28, 22)
31	27	(31, 27)
33	33	(33, 33)
37	35	(37, 35)
40	41	(40, 41)
42	45	(42, 45)

Writing Exercises

51. Explain in words how you plot the point $(4, -2)$ in a rectangular coordinate system.

52. How do you determine if an ordered pair is a solution to a given equation?

53. Is the point $(-3, 0)$ on the *x*-axis or *y*-axis? How do you know?

54. Is the point $(0, 8)$ on the *x*-axis or *y*-axis? How do you know?