Exercise Set 1.1: Linear Equations – Slope and Equations of Lines
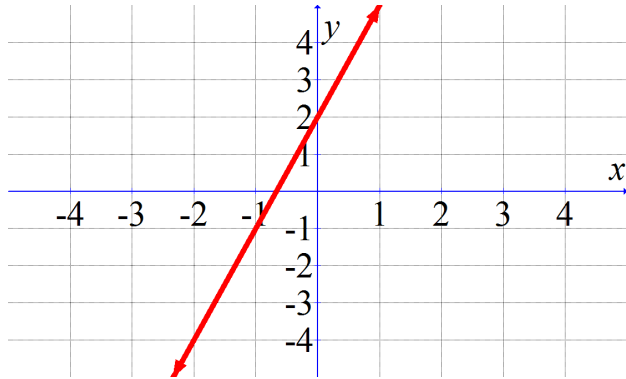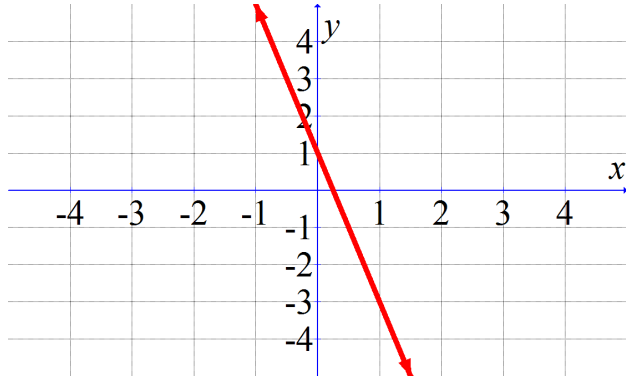
For problems 1 – 6, find the slope of the given line.
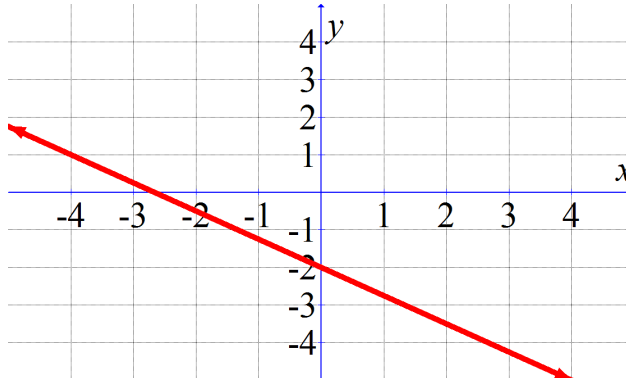
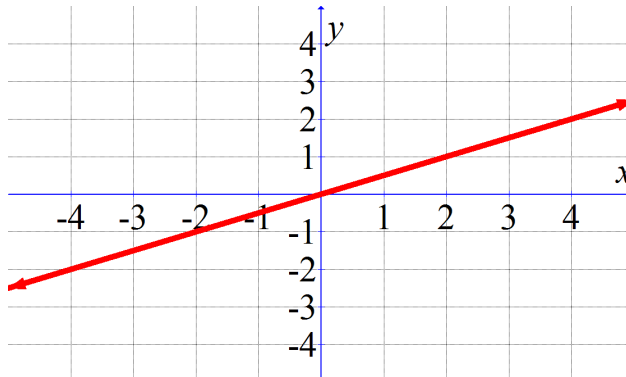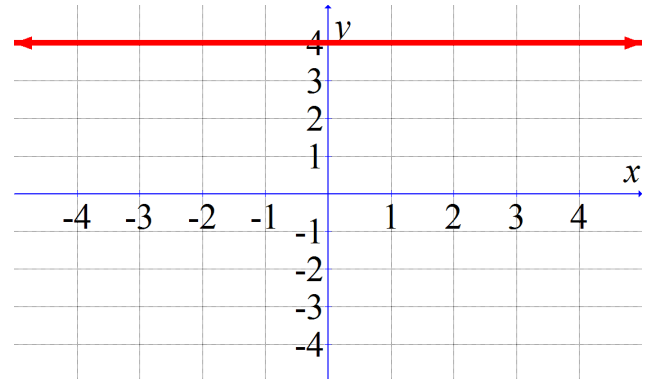**1.**

2.

3.

4.

5.

6.
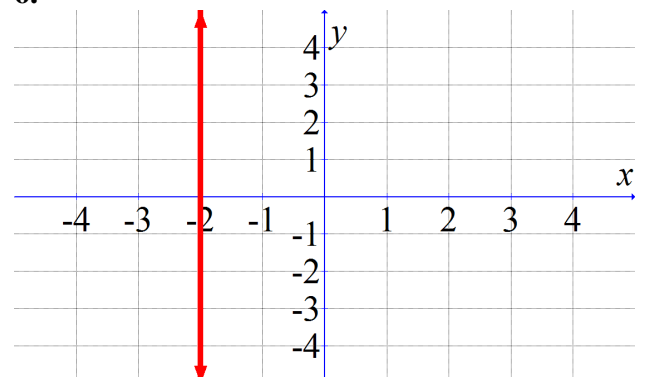
For problems 7 – 16, find the slope of the line that passes through the given points.

7. $(4, 20)$ and $(-1, 10)$

8. $(3, -1)$ and $(1, 5)$

9. $(-4, -2)$ and $(-8, -10)$

10. $(-6, 7)$ and $(-9, 0)$

11. $(1, -2)$ and $(1, -14)$

12. $\left(-\dfrac{8}{5}, \dfrac{3}{11}\right)$ and $\left(\dfrac{5}{12}, -\dfrac{1}{22}\right)$

13. $\left(\dfrac{2}{3}, -\dfrac{1}{7}\right), \left(\dfrac{1}{6}, \dfrac{2}{7}\right)$, and $\left(1, -\dfrac{3}{7}\right)$

14. $(2.5, 0), (0, 12)$, and $(-1, 16.8)$

15. x-intercept: 0.55; y-intercept: 5.5

16. x-intercept: -15; y-intercept: 0

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For problems 17 – 40, write an equation of the line using the information that is given.

17. Slope is 4, y intercept is 5

18. Slope is -1, y intercept is 3

19. Slope is -2, x intercept is 8

20. Slope is 7, x intercept is -2

21. Slope is 7, passes through $(-5, 10)$

22. Slope is -4, passes through $(2, 1)$

23. Slope is -8, passes through $(7, -3)$

24. Slope is 1, passes through $(-2, -3)$

25. Slope is 17, passes through $(-4, -11)$

26. Slope is -21, passes through $(1, -7)$

27. Slope is $\dfrac{5}{4}$, passes through $(16, 2)$

28. Slope is $\dfrac{5}{6}$, passes through $\left(\dfrac{4}{5}, \dfrac{5}{3}\right)$

29. Slope is $-\dfrac{15}{2}$, passes through $\left(-\dfrac{14}{25}, -\dfrac{1}{2}\right)$

30. Slope is $\dfrac{1}{8}$, passes through $(-8, 3)$

31. Passes through the points $(2, 9)$ and $(4, 5)$

32. Passes through the points $(7, 8)$ and $(5, 0)$

33. Passes through the points $(0, -3)$, $(2, -1)$, and $(5, 2)$

34. Passes through the points $(4, 10)$, $(6, 0)$, and $(9, -15)$

35. Passes through the points $(-1, 1)$ and $(-1, 0)$

36. Passes through the points $(9, 4)$ and $(-9, 4)$

37. Vertical line that passes through $(2, -1)$

38. Vertical line that passes through $(4, 6)$

39. Horizontal line that passes through $(2, 5)$

40. Horizontal line that passes through $(-1, 7)$

For problems 41 – 48, use the information given to write an equation of the line in:
A. slope-intercept form
B. standard form
C. general form

41. Passes through $(4, 6)$ and is parallel to the line whose equation is $y = -3x + 1$.

42. Passes through $(-7, 0)$ and is parallel to the line whose equation is $y = x - 8$.

43. Passes through $(-2, -11)$ and is parallel to the line whose equation is $y = 5x - 2$.

44. Passes through $(-6, 1)$ and is parallel to the line whose equation is $y = \dfrac{3}{2}x + 1$.

45. Passes through $(5, -9)$ and is perpendicular to the line whose equation is $y = \dfrac{1}{7}x + 1$.

46. Passes through $(14, 3)$ and is perpendicular to the line whose equation is $y = -\dfrac{7}{3}x + 1$.

47. Passes through $(-9, 4)$ and is perpendicular to the line whose equation is $y = 9x - 2$.

48. Passes through $\left(-4, \dfrac{10}{3}\right)$ and is perpendicular to the line whose equation is $y = -6x$.