Name _____ Class _____ Date _____

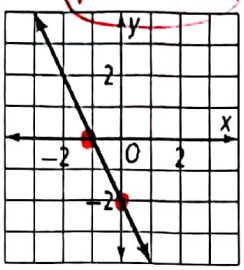
Extra Practice

Chapter 5

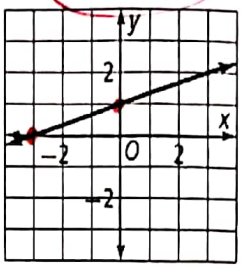
Lesson 5-1

Find the slope of each line.

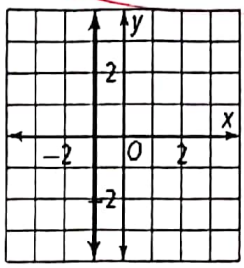
1. $m = -2$



2. $m = \frac{1}{3}$



3. m = undefined



Find the rate of change for each situation.

Unit Rate

4. growing from 1.4 m to 1.6 m in one year

$$\frac{1.6 - 1.4 \text{ m}}{1 \text{ yr}} = \frac{.2 \text{ m}}{1 \text{ yr}}$$

5. bicycling 3 mi in 15 min and 7 mi in 55 min

$$\frac{55 - 15}{7 - 3} \quad \frac{40 \text{ min}}{4 \text{ mi}} = \frac{10 \text{ min}}{1 \text{ mi}}$$

6. growing 22.4 mm in 14 s

$$\frac{22.4 \text{ mm}}{14 \text{ s}} = \frac{1.6 \text{ mm}}{1 \text{ s}}$$

7. reading 8 pages in 9 min and 22 pages in 30 min

$$\frac{8 \text{ p}}{9 \text{ m}} \quad \frac{22 \text{ p}}{30} \quad \frac{22 - 8}{30 - 9} \quad \frac{14 \text{ pg}}{21 \text{ min}} \quad \frac{2 \text{ pg}}{3 \text{ min}} = \frac{2/3 \text{ pg}}{1 \text{ min}}$$

8. The cost of four movie tickets is \$30 and the cost of seven tickets is \$52.50.

$$\frac{\$30}{4 \text{ t}} = \frac{\$7.50}{1 \text{ t}} \quad \frac{\$52.50}{7 \text{ t}} = \frac{\$7.50}{1 \text{ t}}$$

9. Five seconds after jumping out of the plane, a sky diver is 10,000 ft above the ground. After 30 seconds, the sky diver is 3750 ft above the ground.

$$\frac{10{,}000 \text{ ft}}{5 \text{ sec}} - \frac{3750 \text{ ft}}{30 \text{ sec}} = -\frac{6250 \text{ ft}}{25 \text{ sec}} = -\frac{250 \text{ ft}}{1 \text{ sec}}$$

10. Find the slope of the line that includes the points (1, 4) and (−3, −2).

$$m = \frac{-2 + -4}{-3 + -1} = \frac{-6}{-4} = \frac{3}{2}$$

Lesson 5-3

Find the slope and *y*-intercept.

20. $y = 6x + 8$

$m =$ 6 $b =$ 8

21. $3x + 4y = -24$

$\frac{4y}{4} = \frac{-3x-24}{4}$

$y = -\frac{3}{4}x - 6$

$m =$ $-3/4$ $b =$ -6

22. $2y = 8$

$y = 4$

$m =$ 0 $b =$ 4

23. $y = \frac{-3}{4}x - 8$

$m =$ $-3/4$ $b =$ -8

24. $2y = 3x - 1$

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

$m =$ $3/2$ $b =$ $-1/2$

25. $4x - 5y = 2$

$\frac{-5y}{-5} = \frac{-4x+2}{-5}$

$y = \frac{4}{5}x - \frac{2}{5}$

$m =$ $4/5$ $b =$ $-2/5$

A line passes through the given points. Write an equation for the line in slope-intercept form.

1. Find the slope (m)
2. Find the y-intercept (b)
3. Write equation

$y = mx + b$

$m = 1$

26. (–2, 4) and (3, 9)

$\frac{9-4}{3-(-2)} = \frac{5}{5} = 1$

$4 = 1(-2) + b$

$4 = -2 + b$

$6 = b$

$y = 1x + 6$

27. (1, 6) and (9, –4)

$\frac{-4-6}{9-1} = \frac{-10}{8} = -\frac{5}{4}$

$6 = -\frac{5}{4}(1) + b$

$6 = -\frac{5}{4} + b$

$7\frac{1}{4} = b$

$y = -\frac{5}{4}x + 7\frac{1}{4}$

28. (0, –7) and (–1, 0)

$\frac{0-(-7)}{-1-0} = \frac{7}{-1} = -7$

$0 = -7(-1) + b$

$0 = 7 + b$

$-7 = b$

$y = -7x - 8$

29. (7, 0) and (3, –4)

$\frac{-4-0}{3-7} = \frac{-4}{-4} = 1$

$0 = 1(7) + b$

$0 = 7 + b$

$-7 = b$

$y = x - 7$

30. (0, 0) and (–7, 1)

$\frac{1}{-7}$

$0 = -\frac{1}{7}(0) + b$

$0 = 0b$

$0 = b$

$y = -\frac{1}{7}x$

31. (10, 0) and (0, 7)

$\frac{7}{-10}$

$0 = -\frac{7}{10}(10) + b$

$0 = -7 + b$

$7 = b$

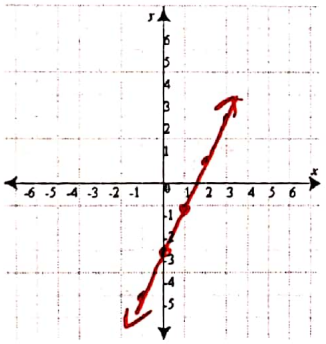
$y = -\frac{7}{10}x + 7$

y int @ 3

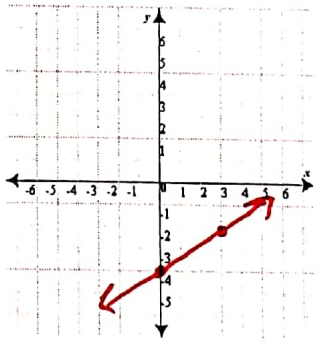
(0, 3)

Graph each equation.

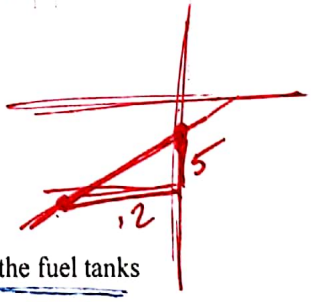
32. $y = 2x - 3$



33. $y = \frac{2}{3}x - 4$



Write an equation in slope-intercept form for each situation.



34. A skateboard ramp is 5 ft high and 12 ft long from end to end.

$y = mx + b$ $y = \frac{5}{12}x$

35. An airplane with no fuel weighs 2575 lbs. Each gallon of gasoline added to the fuel tanks weighs 6 lbs.

$y = 6x + 2575$

Lessons 5-4 and 5-5

Find the x- and y-intercepts for each equation.

39. $y = -7x$

40. $y = \frac{1}{2}x + 3$

41. $-2y = 5x - 12$

Graph each equation.

42. $x + 4y = 8$

43. $y - 5 = -2(x + 1)$

44. $x + 3 = 0$

45. $4x - 3y = 12$

46. $y = -1$

47. $y + 1 = -\frac{1}{2}(x + 2)$

Write an equation in slope-intercept form for each situation.

48. A train travels at a rate of 70 mi/h. Two hours after leaving the station it is 210 miles from its destination.

49. An escalator has a slope of $\frac{3}{4}$. After traveling forward 32 feet, the escalator is 24 feet above the floor.

Write an equation in standard form for each situation.

50. Juan can ride his bike at 12 mi/h and walk at 4 mi/h. Write an equation that relates the amount of time he can spend riding or walking combined, to travel 20 miles.

51. You have $25 to buy supplies for a class party. Juice costs $3 per bottle and chips cost $2 per bag. Write an equation that relates the amount of juice and chips you can buy using $25.

Lessons 5-4 and 5-5

Find the x- and y-intercepts for each equation.

39. $y = -7x$

$7x + y = 0$

x	y
0	0
0	0

40. $y = \frac{1}{2}x + 3$

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

$x - 2y = -6$

x	y
0	3
-6	0

41. $-2y = 5x - 12$

$-5x - 2y = -12$

$5x + 2y = 12$

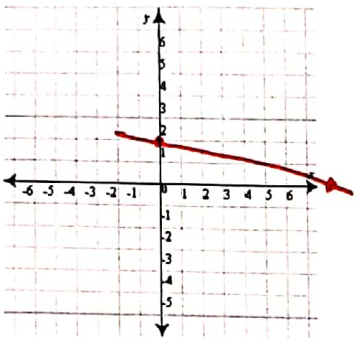
x	y
0	6
$\frac{12}{5}$	0

Graph each equation:

Standard Form $Ax + By = C$	Point-Slope Form $y - y_1 = m(x - x_1)$	Slope-Intercept Form $y = mx + b$

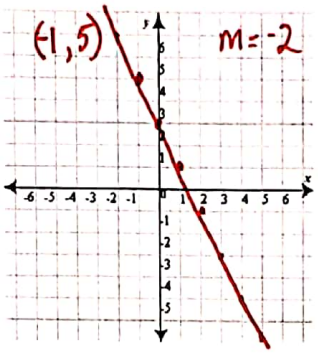
42. $x + 4y = 8$

x	y
0	2
8	0

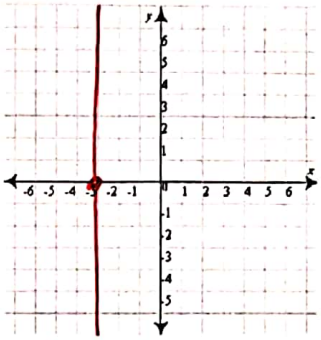


43. $y - 5 = -2(x + 1)$

(-1, 5) $m = -2$

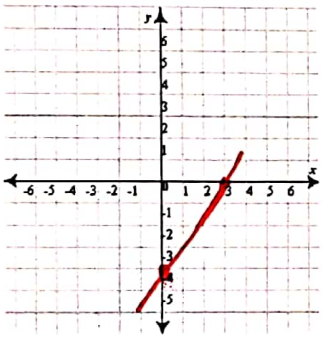


44. $x + 3 = 0$ $x = -3$



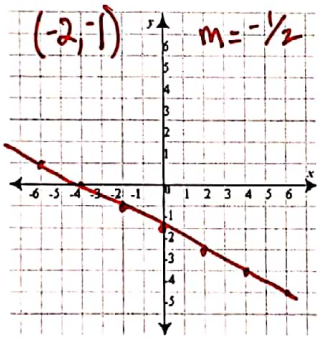
45. $4x - 3y = 12$

x	y
0	-4
3	0

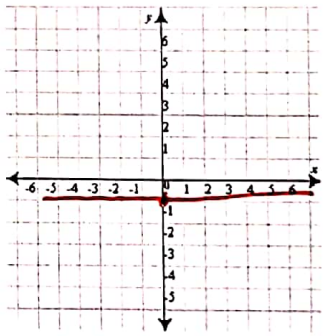


46. $y + 1 = -\frac{1}{2}(x + 2)$

(-2, -1) $m = -\frac{1}{2}$



47. $y = -1$



Write an equation in slope-intercept form for each situation.

48. A train travels at a rate of 70 mi/h. Two hours after leaving the station it is 210 miles from its destination.

x = hours
y = total miles

$m = 70$

$b = 350 \rightarrow 210\text{mi} + 2(70)$

$y = -70x + 350$

49. An escalator has a slope of $\frac{3}{4}$. After traveling forward 32 feet, the escalator is 24 feet above the floor.

$y = \frac{3}{4}x$

Lesson 5-6

Write an equation in standard form with the given information (find slope intercept form first).

52. parallel to $y = 4x + 1$ through $(0, 0)$

1. $m = 4$
2. $0 = 4(0) + b$
3. $0 = b$

$y = 4x + 0$ or $y = 4x$ → $4x - y = 0$

53. perpendicular to $y = -x - 3$ through $(-3, 5)$

1. $m = -1$
2. $m = 1$
3. $5 = 1(-3) + b$

$5 = -3 + b$

$+3 \quad +3$

$8 = b$

$y = x + 8$ → $x - y = -8$

54. perpendicular $3x + 4y = 12$ through $(7, 1)$

$4y = -3x + 12$

$y = -\frac{3}{4}x + 3$

1. $m = -\frac{3}{4}$
2. $m = \frac{4}{3}$
3. $1 = \frac{4}{3}(7) + b$

$\frac{3}{3}x = \frac{28}{3} + b$

$-\frac{28}{3} \quad -\frac{28}{3}$

$-\frac{25}{3} = b$

$y = \frac{4}{3}x - \frac{25}{3}$ → $4x - 3y = 25$

55. parallel to $2x - y = 6$ through $(-6, -9)$

$y = 2x - 6$

1. $m = 2$
2. $-9 = 2(-6) + b$

$-9 = -12 + b$

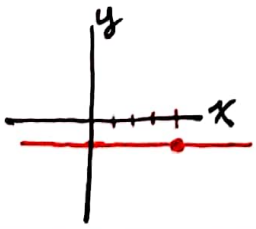
$+12 \quad +12$

$3 = b$

$y = 2x + 3$ → $2x - y = -3$

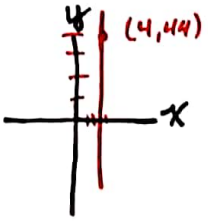
56. parallel to the x-axis and through $(4, -1)$

$y = -1$



57. parallel to the y-axis and through $(4, 44)$

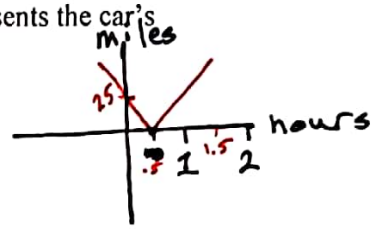
$x = 4$



Lesson 5-8

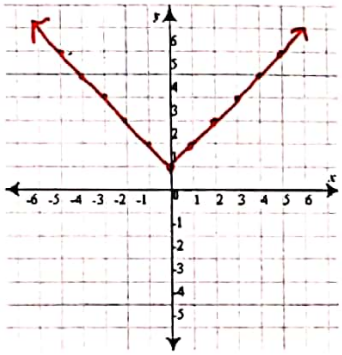
62. A car traveling at a rate of 50 mi/h passes a rest area 30 minutes after the beginning of the trip. Write an absolute value equation that represents the car's distance from the rest area.

$y = |x - .5|$

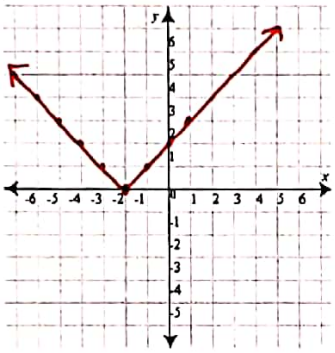


Graph each equation by translating $y = |x|$.

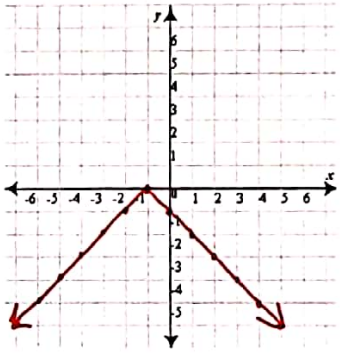
63. $y = |x| + 1$



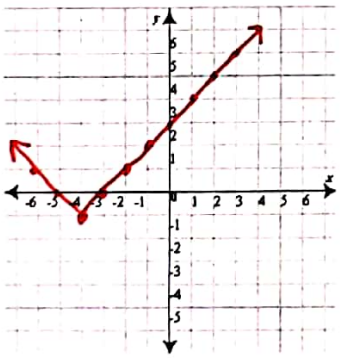
64. $y = |x + 2|$



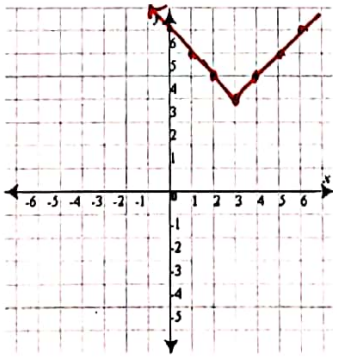
65. $y = -|x + 1|$



66. $y = |x + 4| - 1$



67. $y = |x - 3| + 4$



68. $y = -|x + 2| - 3$