





5. Make a statement that summarizes the steepness of the line and the speed of the plane.

Your summary should be something like:

*The faster the airplane travels, the steeper the line.*

This is because as the rate of travel increases, the distance traveled in a certain amount of time also increases.

The following are complete worked out solutions to selected exercises in the student textbook. These solutions are provided to you so that you can help your child with their homework. Your child's classroom notes, example problems in the text, and these worked out solutions are all useful tools to help you and your child work through their assignment.



## Chapter 5

$$26. \text{ slope} = \frac{\text{rise}}{\text{run}} = \frac{-9}{-5} = \frac{9}{5}$$

$$34. \text{ slope} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{9 - 24}{2 - 2} = \frac{-15}{0} = \text{undefined}$$

$$37. \text{ slope} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{4 - 4}{7 - 10} = \frac{0}{-3} = 0$$

$$45. \text{ slope} = \frac{y_2 - y_1}{x_2 - x_1} \\ = \frac{d - b}{c - a} \text{ or } \frac{b - d}{a - c}$$

### Lesson 5.3

$$12. \text{ Amy's hourly wage} = \frac{\text{change in wages}}{\text{change in hours worked}} = \frac{120 - 0}{10 - 0} = 12; \$12 \text{ per hour}$$

$$\text{Amy's overtime hourly wage} = \frac{\text{change in wages}}{\text{change in hours worked}} = \frac{840 - 480}{60 - 40} = 18; \$18 \text{ per hour}$$

$$15. k = \frac{y}{x} = \frac{5}{8} = 0.625 \\ \text{so } y = 0.625x$$

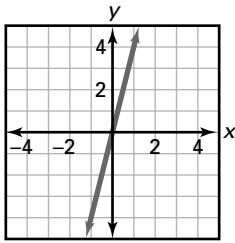
$$18. k = \frac{y}{x} = \frac{-2}{5} = -0.4 \\ \text{so } y = -0.4x$$

$$25. \frac{56}{7} = \frac{8}{x} \\ 56x = 56 \\ x = 1$$

$$28. \text{ Let } V = \text{volume} \\ h = \text{height} \\ \text{then } V = kh \\ 27 = k(3) \\ k = 9 \\ \text{so } V = 9h \\ \text{substitute 12 for } h \\ V = 9(12) \\ V = 108 \text{ cm}^3$$

## Chapter 5

31.  $y = 4x$



### Lesson 5.4

16.  $y = 17x - 4$

The  $y$ -intercept is  $-4$ .

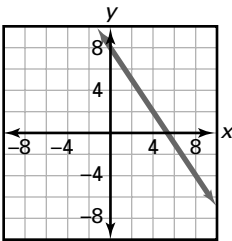
$$0 = 17x - 4$$

$$4 = 17x$$

$$\frac{4}{17} = x$$

The  $x$ -intercept is  $\frac{4}{17}$ .

20.



30.  $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-6 - (-3)}{-2 - (-4)} = \frac{-3}{2}$

Choose  $(x, y) = (-4, -3)$

$$y = mx + b$$

$$-3 = -\frac{3}{2}(-4) + b$$

$$b = -9$$

$$\text{so } y = -\frac{3}{2}x - 9$$

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

41.  $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-5 - (-5)}{10 - 2} = \frac{0}{8} = 0$

The line is horizontal and the  $y$ -intercept is  $-5$ ,

so  $y = -5$ .

## Chapter 5

44.  $y = mx + b$

$$y = \frac{2}{3}x + b$$

The  $y$ -intercept, or  $b$ ,  
is 0 since the line contains  
the origin.

$$y = \frac{2}{3}x + 0$$

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

57. slope =  $\frac{4}{5}$

$$y\text{-intercept} = 9$$

slopes up from left to right  
and passes through (0, 9)

### Lesson 5.5

18.  $7y = -5x - 35$

$$5x + 7y = -35$$

23.  $7x + 14y = 3x - 10$

$$4x + 14y = -10$$

30.  $y - y_1 = m(x - x_1)$

$$y - 1 = -4(x - (-3))$$

35.  $x$ -intercept

$$4x - 5y = 20$$

$$4x - 5(0) = 20$$

$$4x = 20$$

$$x = 5$$

$y$ -intercept

$$4x - 5y = 20$$

$$4(0) - 5y = 20$$

$$-5y = 20$$

$$y = -4$$

41.  $6x + 2y = 40$

$$2y = -6x + 40$$

$$y = -3x + 20$$

$$\text{slope} = -3$$

### Lesson 5.6

22.  $2x - y = 14$

$$-y = -2x + 14$$

$$y = 2x - 14$$

$$m = 2$$

## Chapter 5

32.  $y = 5x + 10$

$$m = -\frac{1}{5}$$

44.  $7x - 2y = 10$

$$2y = 7x - 10$$

$$y = \frac{7}{2}x - 5$$

$$m = \frac{7}{2}$$

$$y - y_1 = m(x - x_1)$$

$$y - 3 = \frac{7}{2}(x - 2)$$

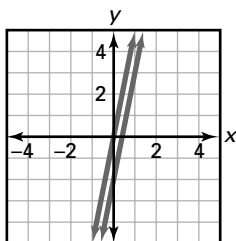
$$y = \frac{7}{2}x - \frac{14}{2} + 3$$

$$2y = 7x - 14 + 6$$

$$-7x + 2y = -8$$

$$7x - 2y = 8$$

56.



Sample answer:

$$y = 5x - 2$$

Any answer of the form  $y = 5x + b$  is acceptable.

64.  $y = \frac{3}{4}x + 5$

Answers may vary.

Sample answer:

$$y = \frac{3}{4}x - \frac{5}{4}$$

$$y = -\frac{4}{3}x + 5$$

$$y = -\frac{4}{3}x - \frac{10}{3}$$

Answers must consist of two lines with slope  $-\frac{4}{3}$  and one line with slope  $\frac{3}{4}$ . The  $y$ -intercepts may vary but the intersection points of the four lines must be spaced so that the lines form a square.