



LESSON
5-5

Practice

Slope-Intercept Form

Write the equation that describes each line in slope-intercept form

1. slope = 4; y-intercept = -3

$y =$ _____

2. slope = -2; y-intercept = 0

$y =$ _____

3. slope = $-\frac{1}{3}$; y-intercept = 6

$y =$ _____

4. slope = $\frac{2}{5}$, (10, 3) is on the line.

Find the y-intercept: $y = mx + b$

_____ = (_____) _____ + b

_____ = _____ + b

_____ = b

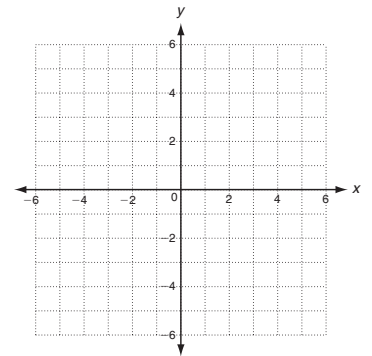
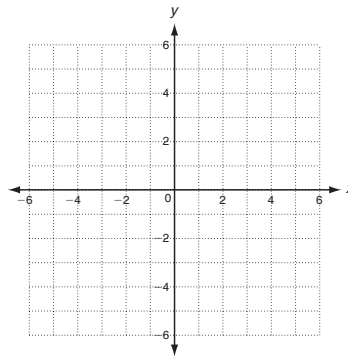
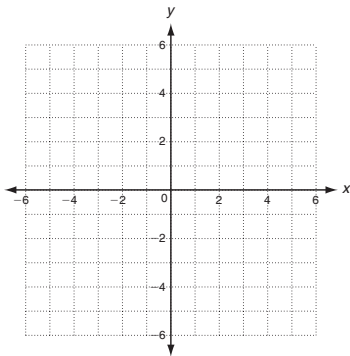
Write the equation: $y =$ _____

Write each equation in slope-intercept form. Then graph the line described by the equation.

5. $y + x = 3$

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

7. $5x - 2y = 10$



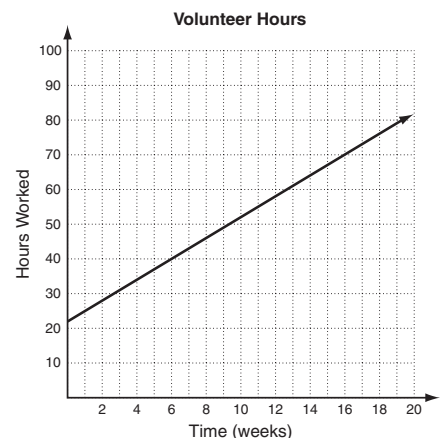
8. Daniel works as a volunteer in a homeless shelter.

So far, he has worked 22 hours, and he plans to continue working 3 hours per week. His hours worked as a function of time is shown in the graph.

a. Write an equation that represents the hours Daniel will work as a function of time. _____

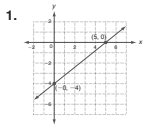
b. Identify the slope and y-intercept and describe their meanings. _____

c. Find the number of hours worked after 16 weeks. _____

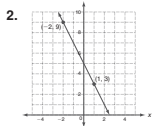


LESSON 5-3 Practice Slope

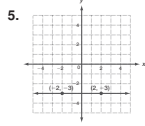
Find the rise and run between each set of points. Then, write the slope of the line.



rise = 4 run = 5
slope = $\frac{4}{5}$



rise = -6 run = 3
slope = -2



rise = 0 run = 4
slope = 0

Find the slope of the line that contains each pair of points.

4. (2, 8) and (1, -3)

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{8 - (-3)}{2 - 1} = \frac{11}{1} = 11$$

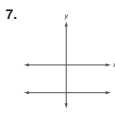
5. (-4, 0) and (-6, -2)

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{0 - (-2)}{-4 - (-6)} = \frac{2}{-2} = -1$$

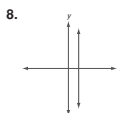
6. (0, -2) and (4, -7)

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - (-7)}{0 - 4} = \frac{5}{-4} = -\frac{5}{4}$$

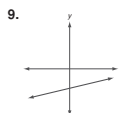
Tell whether the slope of each line is positive, negative, zero, or undefined.



zero



undefined



positive

Find the slope of the line described by each equation.

10. $3x + 4y = 24$

$-\frac{3}{4}$

11. $8x = 48 + 3y$

$\frac{8}{3}$

LESSON 5-4 Practice Direct Variation

Tell whether each equation is a direct variation. If so, identify the constant of variation.

1. $y = 3x$ yes; 3

2. $y = 2x - 9$ no

3. $2x + 3y = 0$ yes; $-\frac{2}{3}$

4. $3y = 9x$ yes; 3

Find the value of $\frac{y}{x}$ for each ordered pair. Then, tell whether each relationship is a direct variation.

| | | | |
|---------------|---------------|---------------|---------------|
| x | 6 | 15 | 21 |
| y | 2 | 5 | 7 |
| $\frac{y}{x}$ | $\frac{1}{3}$ | $\frac{1}{3}$ | $\frac{1}{3}$ |

yes

| | | | |
|---------------|----|----|-----|
| x | 6 | 10 | 25 |
| y | 24 | 40 | 100 |
| $\frac{y}{x}$ | 4 | 4 | 4 |

yes

| | | | |
|---------------|----------------|---------------|----------------|
| x | 10 | 15 | 20 |
| y | 3 | 5 | 9 |
| $\frac{y}{x}$ | $\frac{3}{10}$ | $\frac{1}{3}$ | $\frac{9}{20}$ |

no

8. The value of y varies directly with x , and $y = -18$ when $x = 6$. Find y when $x = -8$.

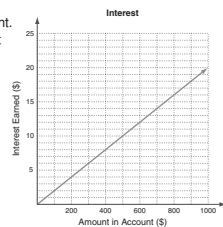
Find k : Use k to find y :
 $y = kx$
 $-18 = k(6)$
 $-3 = k$
 $y = (-3)(-8)$
 $y = 24$

9. The value of y varies directly with x , and $y = \frac{1}{2}$ when $x = 5$. Find y when $x = 30$.

Find k : Use k to find y :
 $y = kx$
 $\frac{1}{2} = k(5)$
 $k = \frac{1}{10}$
 $y = \left(\frac{1}{10}\right)(30)$
 $y = 3$

10. The amount of interest earned in a savings account varies directly with the amount of money in the account. A certain bank offers a 2% savings rate. Write a direct variation equation for the amount of interest y earned on a balance of x . Then graph.

$y = 0.02x$



11. Another bank offers a different savings rate. If an account with \$400 earns interest of \$6, how much interest is earned by an account with \$1800?

\$27

LESSON 5-5 Practice Slope-Intercept Form

Write the equation that describes each line in slope-intercept form

1. slope = 4; y -intercept = -3
 $y = 4x - 3$

4. slope = $\frac{2}{5}$; (10, 3) is on the line.
Find the y -intercept: $y = mx + b$

2. slope = -2; y -intercept = 0
 $y = -2x$

$$\frac{3}{2} = \left(\frac{2}{5}\right)(10) + b$$

$$\frac{3}{2} = 4 + b$$

$$-\frac{5}{2} = b$$

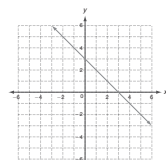
3. slope = $-\frac{1}{3}$; y -intercept = 6
 $y = -\frac{1}{3}x + 6$

Write the equation: $y = \frac{2}{5}x - \frac{5}{2}$

Write each equation in slope-intercept form. Then graph the line described by the equation.

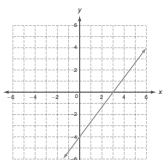
5. $y + x = 3$

$y = -x + 3$



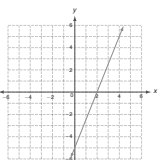
6. $y + 4 = \frac{4}{3}x$

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

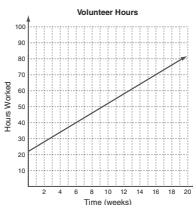


7. $5x - 2y = 10$

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



8. Daniel works as a volunteer in a homeless shelter. So far, he has worked 22 hours, and he plans to continue working 3 hours per week. His hours worked as a function of time is shown in the graph.



a. Write an equation that represents the hours Daniel will work as a function of time. $y = 3x + 22$

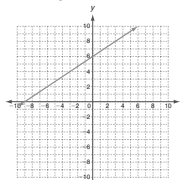
b. Identify the slope and y -intercept and describe their meanings. slope: 3; number of hours per week; y -int: 22; hours already worked

c. Find the number of hours worked after 16 weeks. 70 hours

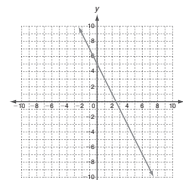
LESSON 5-6 Practice Point-Slope Form

Graph the line with the given slope that contains the given point.

1. slope = $\frac{2}{3}$; (-3, 4)



2. slope = -2; (0, 5)



Write an equation in point-slope form for the line with the given slope that contains the given point.

3. slope = 3; (-4, 2)

$y - 2 = 3(x + 4)$

4. slope = -1; (6, -1)

$y + 1 = -(x - 6)$

Write an equation in slope-intercept form for the line with the given slope that contains the given point.

5. slope = -4; (1, -3)

$y = -4x + 1$

6. slope = $\frac{1}{2}$; (-8, -5)

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

Write an equation in slope-intercept form for the line through the two points.

7. (2, 1); (0, -7)

$y = 4x - 7$

8. (-6, -6); (2, -2)

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

9. The cost of internet access at a cafe is a function of time. The costs for 8, 25, and 40 minutes are shown. Write an equation in slope-intercept form that represents the function. Then find the cost of surfing the web at the cafe for one hour.

$y = 0.17x + 3$; \$13.20

| | | | |
|------------|------|------|------|
| Time (min) | 8 | 25 | 40 |
| Cost (\$) | 4.36 | 7.25 | 9.80 |