Name Answer Key Date _____ Class _____

LESSON 2-4

Practice A

Writing Linear Functions

Identify the slope and *y*-intercept for each equation.

1. $y = 3x + 2$

$m = 3$

$b = 2$

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

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

$b = -7$

3. $2y = 5x - 4$

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

$m = \frac{5}{2}$

$b = -2$

Find the slope of each line.

4. line through (2, 4) and (5, 3)

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{3-4}{5-2} = \frac{-1}{3}$

$m = -\frac{1}{3}$

5. line through (0, 0) and (–1, –3)

$m = \frac{-3}{-1} = 3$

$m = 3$

Write the equation of each line in slope-intercept form, $y = mx + b$.

6. line with slope 3 and intercept 2

$y = 3x + 2$

7. line with slope $\frac{-1}{2}$ and intercept –1

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

8. line with slope 2 passing through (1, 1)

$y - 1 = 2(x - 1)$

$y - 1 = 2x - 2$

$y = 2x - 1$

9. line with slope $\frac{2}{3}$ passing through (4, –1)

$y + 1 = \frac{2}{3}(x - 4)$

$y + 1 = \frac{2}{3}x - \frac{8}{3}$

$y = \frac{2}{3}x - \frac{11}{3}$

10. line parallel to $y = -x + 6$

$y = -(x - 5)$

passing through (5, 0)

$y = -x + 5$

11. line perpendicular to $y = \frac{x}{3} - 4$

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

$y - 1 = -3x - 9$

passing through (–3, 1)

$y = -3x - 8$

Solve.

12. Daniela and Jack are hiking a steady incline. They use their GPS device to determine their elevation every 15 minutes. At 15 minutes and 30 minutes they were at elevations of 10,300 feet and 10,900 feet, respectively.

(15, 10,300)
(30, 10,900)

$m = \frac{10,900 - 10,300}{30 - 15}$

$m = \frac{600}{15} = 40$

$y - 10,300 = 40(t - 15)$

$y - 10,300 = 40t - 600$

$y = 40t + 9,700$

a. Write an equation expressing their elevation in relation to time.

y: elevation
t: minutes

$y = 40t + 9,700$

b. Based on the formula you found above, what is their elevation after one hour?

$y = 40(60) + 9,700 = 12,100$ ft