Name Answers Date

Review 4.4 – 4.7

Find the slope and the *y*-intercept of the graph of the linear equation.

1. $y = -4x - 6$

$m =$ -4 $b =$ $(0,-6)$

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

$m =$ $\frac{1}{2}$ $b =$ $(0,-\frac{1}{3})$

Find the *x*- and *y*-intercepts of the graph of the equation.

3. $3x - 4y = 24$

$(x,0)$
$3x - 4(0) = 24$
$3x = 24$
$x = 8$
$(8,0)$

$(0,y)$
$3(0) - 4y = 24$
$-4y = 24$
$y = -6$
$(0,-6)$

x-intercept = $(8,0)$ y-intercept = $(0,-6)$

4. $-6x + 3y = 12$

$(x,0)$
$-6x + 3(0) = 12$
$-6x = 12$
$x = -2$
$(-2,0)$

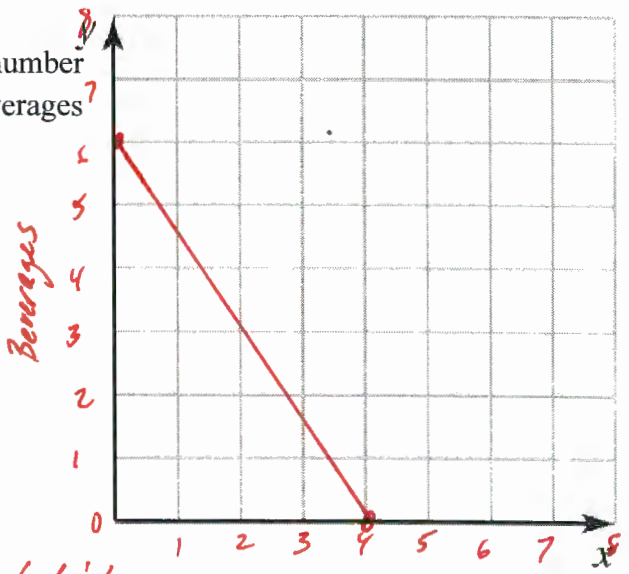
$(0,y)$
$-6(0) + 3y = 12$
$3y = 12$
$y = 4$
$(0,4)$

x-intercept = $(-2,0)$ y-intercept = $(0,4)$

5. You spend \$24 on a meal for you and your friends.

a. Graph the equation $4y + 6x = 24$, where x is the number of sandwiches purchased and y is the number of beverages purchased.

$6x + 4y = 24$



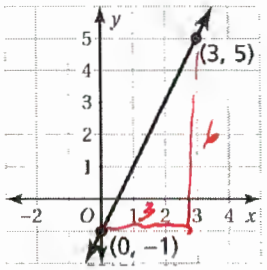
b. Interpret the intercepts.

$(x,0)$
$6x + 4(0) = 24$
$6x = 24$
$x = 4$
$(4,0)$
You can buy 4 sandwiches if you buy 0 drinks

$(0,y)$
$6(0) + 4y = 24$
$4y = 24$
$y = 6$
$(0,6)$
You can buy 6 drinks if you buy 0 sandwiches

Write an equation of the line in **slope-intercept form.**

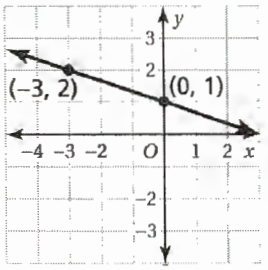
6.



m = $\frac{6}{3} = 2$

b = (0, −1)

7.



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

b = (0, 1)

Equation: $y = 2x - 1$

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

Write an equation in **point-slope form** of the line that passes through the given point and has the given slope.

8. $(1, 2)$; $m = -2$

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

9. $(4, -2)$; $m = \frac{1}{4}$

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

Write an equation in **slope-intercept form** of the line that passes through the given points.

10. $(-3, -1)$, $(4, -1)$

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

$y + 1 = 0(x + 3)$

$y + 1 = 0$

$-1 \quad -1$

$y = -1$

Equation: $y = -1$

11. $(2, 5)$, $(0, 1)$

$m = \frac{1 - 5}{0 - 2} = \frac{-4}{-2} = 2$

Equation: $y = 2x + 1$

12. You are draining your fish aquarium. After 2 minutes, there are 6 gallons of water in the aquarium. After 5 minutes, the aquarium is empty. Write an equation that represents the volume y (in gallons) of water in the aquarium after x minutes.

$m = \frac{0 - 6}{5 - 2} = \frac{-6}{3} = -2$ (2, 6) (5, 0)

$y - 6 = -2(x - 2)$

$y - 6 = -2x + 4$

$y = -2x + 10$