

# Chapter 7, continued

b.  $y = -x + 30$

$$0.2x + 0.05(-x + 30) = 3$$

$$0.2x - 0.05x + 1.5 = 3$$

$$0.15x = 1.5$$

$$x = 10$$

$$y = -10 + 30 = 20$$

The gardener uses 10 ounces of a 20% liquid fertilizer and 80% water mix and 20 ounces of a 5% liquid fertilizer and 95% water mix.

c.  $x + y = 30$

$$0.2x + 0(y) = 0.1(30)$$

$$0.2x = 3$$

$$x = 15$$

For this mix, 15 ounces of the 20% liquid fertilizer and 80% water mix is used, which is more than in the previous mix.

## Cumulative Review Chapters 1-7 (pp. 484-485)

1.  $2^5 \cdot 2 - 4 \div 2 = 32 \cdot 2 - 2 = 64 - 2 = 62$

2.  $24 \div 6 + (9 - 6) = 24 \div 6 + 3 = 4 + 3 = 7$

3.  $5[(6 - 2)^2 - 5] = 5[4^2 - 5] = 5[16 - 5] = 5[11] = 55$

4.  $\sqrt{144} = 12$

5.  $-\sqrt{2500} = -50$

6.  $\pm\sqrt{400} = \pm 20$

7.  $7 + 3x = 16$

$$7 + 3(3) \stackrel{?}{=} 16$$

$$16 = 16 \checkmark$$

Yes, 3 is a solution.

8.  $21y + 1 = 1$

$$21(0) + 1 \stackrel{?}{=} 1$$

$$1 = 1 \checkmark$$

Yes, 0 is a solution.

9.  $20 - 12h = 12$

$$20 - 12(1) \stackrel{?}{=} 12$$

$$8 \neq 12$$

No, 1 is not a solution.

10.  $g - 3 > 2$

$$5 - 3 \stackrel{?}{>} 2$$

$$2 \not> 2$$

No, 5 is not a solution.

11.  $10 \geq 4 - x$

$$10 \stackrel{?}{\geq} 4 - 0$$

$$10 \geq 4$$

Yes, 0 is a solution.

12.  $30 - 4p \geq 5$

$$30 - 4(6) \stackrel{?}{\geq} 5$$

$$6 \geq 5$$

Yes, 6 is a solution.

13.  $5(y - 1) + 4 = 5y - 5 + 4 = 5y - 1$

14.  $12w + (w - 2)3 = 12w + 3w - 6 = 15w - 6$

15.  $(g - 1)(-4) + 3g = -4g + 4 + 3g = -g + 4$

16.  $\frac{10h - 25}{5} = 2h - 5$

17.  $\frac{21 - 4x}{-7} = -3 + \frac{4}{7}x$

18.  $\frac{32 - 20m}{2} = 16 - 10m$

19.  $x - 8 = 21$

$$x = 29$$

20.  $-1 = x + 3$

$$-4 = x$$

21.  $6x = -42$

$$x = -7$$

22.  $\frac{x}{3} = 8$

$$x = 3(8)$$

$$x = 24$$

23.  $5 - 2x = 11$

$$-2x = 6$$

$$x = -3$$

24.  $\frac{2}{3}x - 3 = 17$

$$\frac{2}{3}x = 20$$

$$x = 30$$

25.  $3(x - 2) = -15$

$$3x - 6 = -15$$

$$3x = -9$$

$$x = -3$$

26.  $3(5x - 7) = 5x - 1$

$$15x - 21 = 5x - 1$$

$$10x = 20$$

$$x = 2$$

27.  $-7(2x - 10) = 4x - 10$

$$-14x + 70 = 4x - 10$$

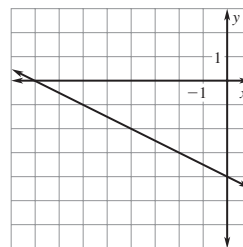
$$80 = 18x$$

$$4.44 = x$$

28.  $x + 2y = -8$

$$2y = -x - 8$$

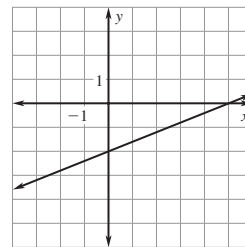
$$y = -\frac{1}{2}x - 4$$



29.  $-2x + 5y = -10$

$$5y = 2x - 10$$

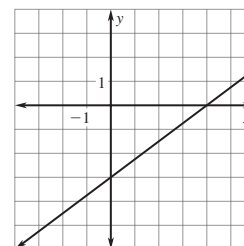
$$y = \frac{2}{5}x - 2$$



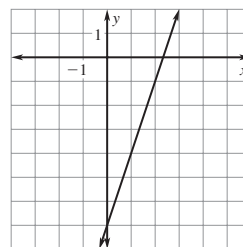
30.  $3x - 4y = 12$

$$-4y = -3 + 12$$

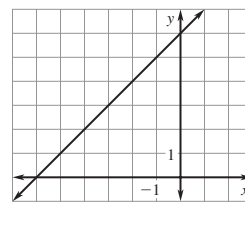
$$y = \frac{3}{4}x - 3$$



31.  $y = 3x - 7$



32.  $y = x + 6$





## Chapter 7, continued

$$\begin{array}{rcl} 57. & 12x + 7y = 3 & \times 2 \rightarrow 24x + 14y = 6 \\ & 8x + 5y = 1 & \times 3 \rightarrow \underline{24x + 15y = 3} \\ & & -y = 3 \\ & & y = -3 \end{array}$$

$$8x + 5(-3) = 1$$

$$8x = 16$$

$$x = 2$$

The solution is (2, -3).

58.  $A = \ell w$

$$A = 30(24) = 720 \text{ in.}^2$$

$$\frac{720 \text{ in.}^2}{36 \text{ in.}^2} = 20 \text{ bags of tiles}$$

$$20(\$3.95) = \$79$$

It will cost \$79.

59. Average change =

$$\frac{-0.17 + 0.04 + (-0.03) + 0.25}{4} = \frac{0.09}{4} = 0.02$$

The average yearly change is \$0.02 per year.

60.  $\frac{2,000,000}{16} = \frac{x}{6}$

$$2,000,000(6) = 16x$$

$$750,000 = x$$

Honeybees visit 750,000 flowers to make 6 ounces of honey.

61. a.  $p$  varies directly with  $\ell$  because  $p$  increases proportionally as  $\ell$  increases.

b.  $p = 2.5\ell$

62. a. (1, 5.8), (4, 7.17)

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{7.17 - 5.81}{4 - 1} = \frac{1.36}{3} = 0.45$$

$$y = mx + b$$

$$5.81 = 0.45(1) + b$$

$$5.36 = b$$

$$y = 0.45x + 5.36$$

b.  $y = 0.45(12) + 5.36$

$$y = 10.76$$

In 2010, the exchange rate will be 10.76 Bolivianos per U.S. dollar.

63.  $F = \frac{9}{5}C + 32$

$$F = \frac{9}{5}(-20) + 32 = -4^\circ\text{F}$$

$$F = \frac{9}{5}(45) + 32 = 113^\circ\text{F}$$

Batteries can be stored:

$$-4^\circ\text{F} \leq x \leq 113^\circ\text{F}$$