

A#13 Continued

Key

2 p.194 #29-37 and p.197 #34-35

29. $-3z - 1 = 8 - 3z$

$$\begin{array}{r} -3z + (-1) = 8 + (-3z) \\ +3z \qquad \qquad \qquad +3z \\ \hline -1 = 8 \end{array}$$

No Real Solution

30. $16 - 2m = 5m + 9$

$$\begin{array}{r} 16 + (-2m) = 5m + 9 \\ +(-2m) \quad +2m \quad +(-9) \\ \hline 7 = 7m \\ \frac{7}{7} = \frac{7m}{7} \\ m = 1 \end{array}$$

31. $2.9w + 5 = 4.7w - 7.6$

$$\begin{array}{r} 2.9w + 5 = 4.7w + (-7.6) \\ +(-2.9w) \quad +7.6 \quad +(-2.9w) \quad +7.6 \\ \hline 12.6 = 1.8w \\ \frac{12.6}{1.8} = \frac{1.8w}{1.8} \\ w = 7 \end{array}$$

32. $2y + 11.4 = 2.6 - 0.2y$

$$\begin{array}{r} 2y + 11.4 = 2.6 + (-0.2y) \\ +.2y \quad +(-11.4) \quad +(-11.4) \quad +.2y \\ \hline 2.2y = -8.8 \\ \frac{2.2y}{2.2} = \frac{-8.8}{2.2} \\ y = -4 \end{array}$$

33. $4(x-3) = -2(6-2x)$

$$\begin{array}{r} 4(x + (-3)) = -2(6 + (-2x)) \\ 4x + (-12) = -12 + 4x \\ +(-4x) \qquad \qquad \qquad +(-4x) \\ \hline -12 = -12 \end{array}$$

$x = \{ \text{All Real \#s} \}$

34. $6(2a+10) = 5(a+5)$

$$\begin{array}{r} 12a + 60 = 5a + 25 \\ +(-5a) \quad +(-60) \quad +(-5a) \quad +(-60) \\ \hline 7a = -35 \\ \frac{7a}{7} = \frac{-35}{7} \\ a = -5 \end{array}$$

35. $\frac{1}{2}(48+24b) = 2(17-4b)$

$$\begin{array}{r} \frac{1}{2}(48+24b) = 2(17+(-4b)) \\ 4+2b = 34 + (-8b) \\ +(-4) \quad +8b \quad +(-4) \quad +8b \\ \hline \frac{10b}{10} = \frac{30}{10} \\ b = 3 \end{array}$$

36. $1.5(n+20) = 0.5(3n+60)$

$$\begin{array}{r} 1.5n + 30 = 1.5n + 30 \\ +(-1.5n) \quad +(-1.5n) \\ \hline 30 = 30 \end{array}$$

$x = \{ \text{All Real \#s} \}$

37. Square: \square $6x+5$

a. $8x - 3 = 6x + 5$

$$\begin{array}{r} 8x + (-3) = 6x + 5 \\ +(-6x) \quad +3 \quad +(-6x) \quad +3 \\ \hline 2x = 8 \\ \frac{2x}{2} = \frac{8}{2} \\ x = 4 \end{array}$$

p.197

34. \$8.50 - Adult Price

\$5.50 - child Price

2 - # of Adult Tickets

3 - # of children Tickets

3 - # of boxes of popcorn

\$40.25 - Total cost

b = cost of a box of popcorn

$$(\text{Total Cost}) = (\text{Adult Price})(\text{\# of Adults}) + (\text{Child Price})(\text{\# of Children}) + 3(\text{cost of popcorn})$$

$$40.25 = (8.5)(2) + (5.5)(3) + 3b$$

$$40.25 = 17 + 16.5 + 3b$$

$$40.25 = 33.5 + 3b$$

$$\begin{array}{r} 40.25 = 33.5 + 3b \\ +(-33.5) \quad +(-33.5) \\ \hline 6.75 = 3b \\ \frac{6.75}{3} = \frac{3b}{3} \\ b = 2.25 \end{array}$$

Each box of popcorn costs \$2.25.

b. $P = 45$

$$P = 4(6(4) + 5)$$

$$P = 4(24 + 5)$$

$$P = 116 \text{ units}$$

35. \$30 - membership fee

\$5 - cost of members

\$7 - cost of non-members

V = # of visits to justify membership

$$(\text{cost with membership}) = (\text{cost without membership})$$

$$(\text{membership fee}) + (\text{member cost})(\text{\# of visits}) = (\text{non-member cost})(\text{\# of visits})$$

$$30 + 5V = 7V$$

$$\begin{array}{r} 30 + 5V = 7V \\ +(-5V) \quad +(-5V) \\ \hline 30 = 2V \\ \frac{30}{2} = \frac{2V}{2} \\ V = 15 \end{array}$$

It will take 15 visits for the costs to be the same.