

**Solve.**

1)  $x^2 + 5x - 6 = 0$

2)  $x^2 + 11x + 24 = 0$

3)  $5x^2 = 45$

4)  $3x^2 - 6x = 24$

5)  $x^2 - 6x - 16 = 0$

6)  $3x^2 - 12 = 0$

7)  $\frac{1}{2}x^2 = 2$

8)  $x^2 + 9x + 20 = 0$

9)  $x^2 + 5x = 24$

10)  $x(4x+1) = x+16$

11)  $2x^2 - 2x = x^2 + 15$

12)  $x^2 - 11x = -30$

13)  $2x^2 = 16x + 40$

14)  $x^2 + 4x - 12 = 0$

15)  $4x^2 - 16x + 16 = 0$

**Simplify each radical.**

16)  $\sqrt{18n^{11}}$

17)  $-4\sqrt{72}$

18)  $5\sqrt{84}$

19)  $\frac{1}{2}\sqrt{243x}$

20)  $2\sqrt{98x^4y^2}$

21)  $\sqrt{x^6y^3z^4}$

22)  $\sqrt{\frac{196}{25}}$

23)  $-3\sqrt{108x^3}$

**Use slopes to tell whether the lines are parallel, perpendicular, coinciding, or intersecting.**

$$24) \begin{cases} y = -\frac{4}{3}x + 2 \\ y = \frac{3}{4}x + 2 \end{cases}$$

$$25) \begin{cases} y = 2x + 6 \\ y = 2x + 6 \end{cases}$$

$$26) \begin{cases} 5x - y = -4 \\ x + 5y = 30 \end{cases}$$

$$27) \begin{cases} x - 3y = 6 \\ 3x - y = -1 \end{cases}$$

**Solve the following systems of equations using the method of your choice. (Graphing, substitution, or elimination)**

$$28) \begin{cases} 4x + 3y = 1 \\ -2x - 3y = 1 \end{cases}$$

$$29) \begin{cases} 2x + y = 3 \\ -2x + 5y = -9 \end{cases}$$

$$30) \begin{cases} 5x = 9 - y \\ 10x - 7y = -18 \end{cases}$$

$$31) \begin{cases} y = -6x - 2 \\ 12x + 2y = -6 \end{cases}$$

$$32) \begin{cases} 2x + 8y = 6 \\ -5x - 20y = -15 \end{cases}$$

$$33) \begin{cases} -\frac{5}{7} - \frac{11}{7}x = -y \\ 2y = 7 + 5x \end{cases}$$

34) A store sells cashews for \$5.00 per pound and peanuts for \$1.50 per pound. The manager decides to mix 30 pounds of peanuts with some cashews and sell the mixture for \$3.00 per pound.

A. Write a system of equations to represent the sale of the cashews and peanuts.

B. How many pounds of cashews should be mixed with the peanuts so that the mixture will produce the same revenue as would sell the nuts separately?