Elementary Algebra Skill

Solving Equations in One Variable

Solve each equation.

1) $4 = x - (-11)$

2) $6x = -24$

3) $2 + 9x = -133$

4) $-4 = \dfrac{7 + m}{2}$

5) $6n - 7 - 7n = -14$

6) $-6(1 - 2n) + 5n = 79$

7) $-3(1 - 6x) - (x + 1) = -55$

8) $-2 + 5x + 8x = 4 + 8x + 6x$

9) $\dfrac{1}{3}x + \dfrac{5}{4} + 2\dfrac{2}{3} = \dfrac{19}{4}$

10) $4.6 + 4.3x = 10.1 + 3.2x$

11) $(2x - 3)(x - 8) = 0$

12) $x^3 + 18x = 9x^2$

Solve each equation. Remember to check for extraneous solutions.

13) $1 - \dfrac{x - 3}{x} = \dfrac{x + 5}{x}$

14) $\dfrac{x + 3}{2x + 4} = \dfrac{1}{2x^2 + 4x} - \dfrac{3}{2x}$

15) $8 = \sqrt{n - 5}$

16) $\sqrt{90 - x} = x$

Solve by factoring.

17) $3p^2 + 48 = 26p$

Solve by taking square roots.

18) $7m^2 - 5 = 170$

Solve by completing the square.

19) $-72 - 14a = -a^2$

Solve using the quadratic formula.

20) $3p^2 - 2p = 23$

Answers to Solving Equations in One Variable

1) $\{-7\}$

5) $\{7\}$

9) $\left\{\dfrac{5}{2}\right\}$

13) $\{-2\}$

17) $\left\{\dfrac{8}{3}, 6\right\}$

20) $\left\{\dfrac{1+\sqrt{70}}{3}, \dfrac{1-\sqrt{70}}{3}\right\}$

2) $\{-4\}$

6) $\{5\}$

10) $\{5\}$

14) $\{-1, -5\}$

18) $\{5, -5\}$

3) $\{-15\}$

7) $\{-3\}$

11) $\left\{\dfrac{3}{2}, 8\right\}$

15) $\{69\}$

19) $\{18, -4\}$

4) $\{-15\}$

8) $\{-6\}$

12) $\{0, 3, 6\}$

16) $\{9\}$