

**5.6 Solving Equations by Factoring**

Name \_\_\_\_\_

Solve each equation.

**1.**  $(x - 1)(x - 7) = 0$

**2.**  $(x + 4)(x - 3) = 0$

**3.**  $(x + 3)(x - 3) = 0$

**4.**  $(x - 2)(x - 2) = 0$

**5.**  $(2x + 5)(x - 4)(x - 6) = 0$

**6.**  $(3x - 4)(2x + 1)(x + 6) = 0$

Answers: **1.**  $\{1, 7\}$ ; **3.**  $\{-3, 3\}$ ; **5.**  $\{-\frac{5}{2}, 4, 6\}$

Solve each equation.

7.  $x^2 + 7x + 12 = 0$

8.  $x^2 - 8x + 15 = 0$

9.  $2x^2 - 5x - 12 = 0$

10.  $6x^2 + x - 7 = 0$

Answers: 7.  $\{-3, -4\}$ ; 9.  $\{4, -\frac{3}{2}\}$

Solve each equation.

**11.**  $3x^2 - 48 = 0$

**12.**  $5x^2 - 20 = 0$

**13.**  $x^2 + 2x = 15$

**14.**  $x^2 - x = 12$

Answers: **11.**  $\{-4, 4\}$ ; **13.**  $\{3, -5\}$

Solve each equation.

15.  $6x^2 - x = 2$

16.  $2x^2 - 9x = -9$

17.  $x^2 - 3(3x - 4) = -8$

18.  $x^2 + 4(x - 2) = 4$

Answers: 15.  $\{\frac{2}{3}, -\frac{1}{2}\}$ ; 17.  $\{4, 5\}$

Solve each equation.

19.  $x^2 - 20 = 5$

20.  $x^2 - 30 = 6$

21.  $(x + 1)(x - 3) = 5$

22.  $(x + 2)(x - 5) = 8$

Answers: 19.  $\{5, -5\}$ ; 21.  $\{4, -2\}$