

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.** $\{4, -2\}$