

## Algebra I Worksheet #2 Unit 12 Selected Homework Solutions

Use the factoring method to solve each equation.

$$\begin{aligned} 1. \quad x^2 &= 6x + 16 \\ x^2 - 6x - 16 &= 0 \\ (x - 8)(x + 2) &= 0 \\ x - 8 = 0 \text{ or } x + 2 = 0 \\ x = 8 \text{ or } x = -2 \end{aligned}$$

$$\begin{aligned} 11. \quad 5x^2 &= x \\ 5x^2 - x &= 0 \\ x(5x - 1) &= 0 \\ x = 0 \text{ or } 5x - 1 = 0 \\ 5x &= 1 \\ x = 0 \text{ or } x = 1/5 \end{aligned}$$

$$\begin{aligned} 17. \quad 49x^2 &= 42x - 9 \\ 49x^2 - 42x + 9 &= 0 \\ (7x - 3)^2 &= 0 \\ 7x - 3 &= 0 \\ 7x &= 3 \\ x &= 3/7 \end{aligned}$$

$$\begin{aligned} 6. \quad 5x &= 6 - 6x^2 \\ 6x^2 + 5x - 6 &= 0 \\ (3x - 2)(2x + 3) &= 0 \\ 3x - 2 = 0 \text{ or } 2x + 3 = 0 \\ 3x = 2 \quad 2x = -3 \\ x = 2/3 \text{ or } x = -3/2 \end{aligned}$$

$$\begin{aligned} 14. \quad 16x^2 &= 25 \\ 16x^2 - 25 &= 0 \\ (4x - 5)(4x + 5) &= 0 \\ 4x - 5 = 0 \text{ or } 4x + 5 = 0 \\ 4x = 5 \quad 4x = -5 \\ x = 5/4 \text{ or } x = -5/4 \\ x &= \pm 5/4 \end{aligned}$$

$$\begin{aligned} 19. \quad (4x - 1)(x - 5) &= (x - 2)^2 - 9 \\ 4x^2 - 21x + 5 &= x^2 - 4x + 4 - 9 \\ 4x^2 - 21x + 5 &= x^2 - 4x - 5 \\ 3x^2 - 17x + 10 &= 0 \\ (3x - 2)(x - 5) &= 0 \\ 3x - 2 = 0 \text{ or } x - 5 = 0 \\ 3x = 2 \\ x = 2/3 \text{ or } x = 5 \end{aligned}$$