

Algebra II Worksheet #7 Unit 6 selected solutions

Solve using the factoring method.

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

$$\begin{aligned}
 6. \quad & (2x - 1)^2 = 2x^2 - 3x + 11 \\
 & 4x^2 - 4x + 1 = 2x^2 - 3x + 11 \\
 & 2x^2 - x - 10 = 0 \\
 & (2x - 5)(x + 2) = 0 \\
 & 2x - 5 = 0 \text{ or } x + 2 = 0 \\
 & x = 5/2 \text{ or } x = -2
 \end{aligned}$$

Solve using the square root property method.

$$\begin{aligned}
 9. \quad & 3x^2 - 8 = 0 \\
 & 3x^2 = 8 \\
 & x^2 = \frac{8}{3} \\
 & x = \pm \sqrt{\frac{8}{3}} \\
 & x = \pm \frac{\sqrt{24}}{3} \\
 & x = \pm \frac{2\sqrt{6}}{3}
 \end{aligned}$$

Solve using the complete the square

$$\begin{aligned}
 13. \quad & 2x^2 + 3x - 9 = 0 \\
 & 2x^2 + 3x = 9 \\
 & x^2 + \frac{3}{2}x = \frac{9}{2} \\
 & x^2 + \frac{3}{2}x + \frac{9}{16} = \frac{9}{2} + \frac{9}{16} \\
 & \left(x + \frac{3}{4}\right)^2 = \frac{81}{16} \\
 & x + \frac{3}{4} = \pm \frac{9}{4} \\
 & x = \frac{-3 \pm 9}{4} \\
 & x = 3/2 \text{ or } x = -3
 \end{aligned}$$

Solve using the quadratic formula.

$$\begin{aligned}
 16. \quad & 6x^2 + x - 2 = 0 \\
 a = 6 \quad & x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \\
 b = 1 \\
 c = -2 \quad & x = \frac{-1 \pm \sqrt{1 - (-48)}}{12} \\
 & x = \frac{-1 \pm \sqrt{49}}{12} \\
 x = \frac{-1 + 7}{12} \text{ or } x = \frac{-1 - 7}{12} \\
 x = 1/2 \text{ or } x = -2/3
 \end{aligned}$$