# Algebra I Worksheet #7 Unit 13 Selected Homework Solutions

Solve each of the following **using the factoring method**.

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

$x(5x - 1) = 0$

$x = 0$ or $5x - 1 = 0$

$5x = 1$

$x = 0$ or $x = 1/5$

**4.** $6x^2 - x - 12 = 0$

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

$3x + 4 = 0$ or $2x - 3 = 0$

$3x = -4$ $\quad 2x = 3$

$x = -4/3$ or $x = 3/2$

Solve each of the following **using the square root property**. If any solution is irrational, then give its exact value in standard radical form.

**5.** $x^2 - 8 = 0$

$x^2 = 8$

$x = \pm\sqrt{8}$

$x = \pm 2\sqrt{2}$

**7.** $9x^2 - 4 = 0$

$9x^2 = 4$

$x^2 = \frac{4}{9}$

$x = \pm\sqrt{\frac{4}{9}}$

$x = \pm\frac{2}{3}$

Solve each of the following **using the complete the square method**. If any solution is irrational, then give its exact value in standard radical form.

**9.** $x^2 + 6x + 2 = 0$

$x^2 + 6x = -2$

$x^2 + 6x + 9 = -2 + 9$

$(x + 3)^2 = 7$

$x + 3 = \pm\sqrt{7}$

$x = -3 \pm \sqrt{7}$

**12.** $3x^2 + 4x - 1 = 0$

$3x^2 + 4x = 1$

$x^2 + \frac{4}{3}x = \frac{1}{3}$

$x^2 + \frac{4}{3}x + \frac{4}{9} = \frac{1}{3} + \frac{4}{9}$

$\left(x + \frac{2}{3}\right)^2 = \frac{7}{9}$

$x + \frac{2}{3} = \pm\sqrt{\frac{7}{9}}$

$x + \frac{2}{3} = \pm\frac{\sqrt{7}}{3}$

$x = \frac{-2 \pm \sqrt{7}}{3}$

Solve each of the following **using the quadratic formula**. If any solution is irrational, then give its exact value in standard radical form. Show your work neatly organized.

**14.** $2x^2 - 5x - 3 = 0$

$a = 2$

$b = -5$

$c = -3$

$x = \frac{5 \pm \sqrt{25 - -24}}{4}$

$x = \frac{5 \pm \sqrt{49}}{4}$

$x = \frac{5 \pm 7}{4}$

$x = 3$ or $x = \frac{-1}{2}$

**16.** $3x^2 + 2x - 3 = 0$

$a = 3$

$b = 2$

$c = -3$

$x = \frac{-2 \pm \sqrt{4 - -36}}{6}$

$x = \frac{-2 \pm \sqrt{40}}{6}$

$x = \frac{-2 \pm 2\sqrt{10}}{6}$

$x = \frac{-1 \pm \sqrt{10}}{6}$