Algebra I Worksheet #6 Unit 13 Selected Homework Solutions

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

1. $2x^2 + x - 1 = 0$

$ax^2 + bx + c = 0$

$a = 2$, $b = 1$, $c = -1$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-1 \pm \sqrt{1 - -8}}{4}$$

$$x = \frac{-1 \pm \sqrt{9}}{4} = \frac{-1 \pm 3}{4}$$

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

3. $3x^2 + 6x + 1 = 0$

$ax^2 + bx + c = 0$

$a = 3$, $b = 6$, $c = 1$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-6 \pm \sqrt{36 - 12}}{6}$$

$$x = \frac{-6 \pm \sqrt{24}}{6} = \frac{-6 \pm 2\sqrt{6}}{6}$$

$$x = \frac{-3 \pm \sqrt{6}}{3}$$

5. $5x^2 + 3x - 2 = 0$

$ax^2 + bx + c = 0$

$a = 5$, $b = 3$, $c = -2$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-3 \pm \sqrt{9 - -40}}{10}$$

$$x = \frac{-3 \pm \sqrt{49}}{10} = \frac{-3 \pm 7}{10}$$

$x = \frac{2}{5}$ or $x = -1$

9. $x^2 - 5x + 3 = 0$

$ax^2 + bx + c = 0$

$a = 1$, $b = -5$, $c = 3$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{5 \pm \sqrt{25 - 12}}{2}$$

$$x = \frac{5 \pm \sqrt{13}}{2}$$