Algebra I   Worksheet #5   Unit 13 Selected Homework Solutions

Solve each of the following **using the complete the square method**. 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. $x^2 - 4x - 5 = 0$
$$x^2 - 4x = 5$$
$$x^2 - 4x + 4 = 5 + 4$$
$$(x - 2)^2 = 9$$
$$x - 2 = \pm 3$$
$$x = 2 \pm 3$$
$$x = 5 \text{ or } x = -1$$

3. $2x^2 - 4x - 1 = 0$
$$2x^2 - 4x = 1$$
$$x^2 - 2x = \frac{1}{2}$$
$$x^2 - 2x + 1 = \frac{1}{2} + 1$$
$$(x - 1)^2 = \frac{3}{2}$$
$$x - 1 = \pm \frac{\sqrt{6}}{2}$$
$$x = \frac{2 \pm \sqrt{6}}{2}$$

5. $x^2 - 3x + 1 = 0$
$$x^2 - 3x = -1$$
$$x^2 - 3x + \frac{9}{4} = -1 + \frac{9}{4}$$
$$\left(x - \frac{3}{2}\right)^2 = \frac{5}{4}$$
$$x - \frac{3}{2} = \pm \frac{\sqrt{5}}{2}$$
$$x = \frac{3 \pm \sqrt{5}}{2}$$

7. $x^2 - 6x - 3 = 0$
$$x^2 - 6x = 3$$
$$x^2 - 6x + 9 = 3 + 9$$
$$(x - 3)^2 = 12$$
$$x - 3 = \pm 2\sqrt{3}$$
$$x = 3 \pm 2\sqrt{3}$$