Unit 2 Review. 2A-2C

1. Convert to vertex form by completing the square.

$$y = 4x^2 + 2x - 5$$
$$y + 5 = 4x^2 + 2x$$
$$\frac{y+5}{4} = x^2 + \frac{1}{2}x$$
$$\frac{y+5}{4} + \frac{1}{16} = x^2 + \frac{1}{2}x + \frac{1}{16}$$
$$\frac{y+5}{4} + \frac{1}{16} = \left(x + \frac{1}{4}\right)^2$$
$$\frac{y+5}{4} = \left(x + \frac{1}{4}\right)^2 - \frac{1}{16}$$
$$y + 5 = 4\left(x + \frac{1}{4}\right)^2 - \frac{1}{4}$$

2. Find the equation of the line through (2,3) and (4,7) in slope-intercept form.

$$m = \frac{7-3}{4-2} = 2$$
$$y - 7 = 2(x - 4)$$
$$y - 7 = 2x - 4$$
$$y = 2x + 3$$

3. Solve with the Square root method

$$3(x + 4)^2 = 8$$

$$x = -\frac{2\sqrt{6}}{3} - 4 \; or \; x = \frac{2\sqrt{6}}{3} - 4$$

4. Solve with the Square root method

$$2y^2 - 8 = 6 - 2y^2$$

$$y = \frac{\sqrt{14}}{2} \; or \; y = -\frac{\sqrt{14}}{2}$$

5. Solve by completing the square.

$$x^2 + 6x = 7$$

$$x = -7 \; or \; x = 1$$

6. Solve by completing the square.

$$x^2 - 7x + \frac{5}{4} = 0$$

$$x = \frac{7}{2} - \sqrt{11} \; or \; x = \sqrt{11} + \frac{7}{2}$$

7. Solve by completing the square.

$$2x^2 - 7x + 9 = (x - 3)(x + 1) + 3x$$

$$x = 2 \; or \; x = 6$$

8. Solve using the Quadratic Formula.

$$x^2 + 8x - 2 = 0$$

$$x = -3\sqrt{2} - 4 \; or \; x = 3\sqrt{2} - 4$$

9. Solve using the Quadratic Formula.

$$3x + 4 = x^2$$

$$x = -1 \; or \; x = 4$$

10. Solve using the Quadratic Formula.

$$x^2 - 2x + 6 = 2x^2 - 6x - 26$$

$$x = -4 \; or \; x = 8$$