Name:_____

1.4 Solving Quadratic Equations

1) Solve by factoring. (NC)

$$15x^2 - 30x = 18x - 21x^2$$

2) Solve by extracting the square root. (NC)

$$(2x-1)^2 = (x+5)^2$$

3) Solve by completing the square. (NC)

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

4) Use the discriminant to determine the number of solutions and classify them as real/imaginary and/or rational/irrational. Then, find the solution(s) if they are real numbers. (NC)

$$5x^2 - 2x + 6 = 0$$

5) Use the discriminant to determine the number of solutions and classify them as real/imaginary and/or rational/irrational. Then, find the solution(s) if they are real numbers. (NC)

$$3x^2 - 5x = 10$$

6) Solve by any method. Round your answer to three decimal places. (C)

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

7) A rectangular garden is 10 feet by 16 feet. When each dimension is increased by the same amount, the area is increased by 40 square feet. Find the amount of feet that each dimension is increased by. Put your answer in radical form and in decimal form. (C)

8) The product of two consecutive odd integers increased by two times the larger number is 225. What are the two integers? (C)

9) A calculator is dropped from an initial height of 475 ft. Using the position equation $s = -16t^2 + v_0t + s_0$, where v_0 is initial velocity (in seconds) and s_0 is initial height (in feet), find (C):
a) An equation that gives the height s at any time t.

b) Find the height after 1.5 seconds.

c) Find the maximum height.

d) When the ball hits the ground.

e) Sketch the graph with detailed axes.