Name: _____ Date: _____

Ch2 Review #3 on Solving Trinomials

1. Solve by factoring

a) $x^2 - x - 56 = 0$

b) $6x^2 + 7x - 20 = 0$

c) $9x^2 - 64 = 0$

d) $9x^2 - 42x + 49 = 0$

e) $25m^2 - 49 = 0$

f) $16y^2 + 72y + 81 = 0$

2. Complete the square.

a) $y = 3x^2 - 12x + 7$

b) $y = 0.5x^2 - 5x - 3$

c) $y = 4x^2 - 12x + 9$

d) $y = -2x^2 - 14x - 1$

3. Solve by completing the square.

a) $5x^2 - 30x + 8 = 0$

b) $-\frac{1}{3}x^2 + 4x - 5 = 0$

c) $6x^2 + 30x + 5 = 0$

d) $-\frac{1}{2}x^2 - \frac{9}{2}x + 5 = 0$

Solve by using the quadratic formula.

a) $6x^2 + x - 48 = 0$

b) $5x^2 - 7x = 90$

c) $0.4x^2 + 0.2x = 1.7$

d) $\frac{7}{2}x^2 - \frac{1}{2} = x$

4. Use the discriminant to determine the nature of the root.

a) $x^2 - 8x - 12 = 0$

b) $2x^2 - 5x - 12 = 0$

5. For what values of k does each equation have two different real roots?

a) $x^2 + kx + 9 = 0$

b) $3x^2 + kx + 27 = 0$

6. For what values of m does each equation have two equal real roots?

a) $4x^2 + mx + 9 = 0$

b) $(2m - 1)x^2 - 8x + 6 = 0$

7. For what values of n does each equation have no real roots?

a) $5x^2 + mx + 20 = 0$

b) $nx^2 - 5x + n = 0$

8. A ball is thrown into the air from the balcony of a condo and falls to the ground. The height h meters of the ball relative to the ground t seconds after being thrown is given by $h = -5t^2 + 18t + 20$. When will the ball reach 28 meters?

9. A rectangular lot is bordered on one side by a stream and on the other three sides by 200 meters of fencing. What are the dimensions of the lot if its area is 4350 m^2.

10. The second number is 4 more than 3 times the first number and their product are 480. Find the numbers.

11. A metal wire, 40 cm long, is cut in two and each piece bent to form a square. If the sum of their areas is 58 cm^2, how long is each piece of wire?

12. A family plans to fence in a rectangular patio area behind their house. They have 200 feet of fence to use. One side of the rectangle is the back of the house. What should be the dimensions of the rectangular region if they want to make the patio area enclosed as large as possible