Quadratic Functions and Equations … TEST (ch.9) ***Study Guide***

name _____ date _____ block _____

Use a table of values to graph each function. Identify the equation for the axis of symmetry, the coordinates of the vertex, and identify whether the vertex is a maximum or a minimum. ***You'll need to use your own graph paper.***

1) $y = 5 + 16x - 2x^2$	2) $y + 2 = x^2 - 10x + 25$

Solve the quadratic equations using a method of your choice. Round to the nearest hundredth if necessary.

3) $m^2 - 10m = 23$	4) $n^2 - 8n = 4$	5) $3t^2 - 7t - 20 = 0$	6) $0.3t^2 + 0.1t = 0.2$
7) $4v^2 + 25 = 20v$	8) $x^2 + 20x + 70 = -30$	9) $5r^2 - 7r = 1$	10) $2n^2 - 7n - 3 = 0$
11) $2x^2 + 98 = 28x$	12) $a^2 - 12 = 0$	13) $2x^2 + 6x + 12 = 0$	14) $3m^2 + 6m + 3 = 0$

State the value of the discriminant. Then determine the number of real roots of the equation.

15) $y^2 - 10y + 25 = 0$	16) $3h^2 + 7h + 3 = 0$

Write and solve an equation to answer each question below. Write your answer in a complete sentence.

17) A rectangular poster has an area of 190 in^2. The height of the poster is 1 in. less than twice its width. Find the dimensions of the poster.	18) The sum of the squares of two consecutive odd numbers is 130. What are the numbers?
19) A ball is thrown upward from a height of 15 ft with an initial upward velocity of 5 ft/s. Use the formula $h = -16t^2 + vt + c$ to find how long it will take for the ball to hit the ground.	20) A projectile is shot vertically up in the air from ground level. Its distance h, in feet, after t seconds is given by $h = 96t - 16t^2$. Find the values of t when h is 96 feet.