

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.

$y = 5 + 16x - 2x^2$	$y + 2 = x^2 - 10x + 25$
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Solve the quadratic equations using a method of your choice. Round to the nearest hundredth if necessary.

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

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

$y^2 - 10y + 25 = 0$	$3h^2 + 7h + 3 = 0$
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Write and solve an equation to answer each question below. Write your answer in a complete sentence.

<p>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.</p>	<p>The sum of the squares of two consecutive odd numbers is 130. What are the numbers?</p>
<p>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.</p>	<p>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.</p>