Honors Algebra II

Notes Section 1.8

Use the Quadratic Formula and the Discriminant

VOCABULARY

Quadratic Formula: _____

Discriminant: _____

Value of the Discriminant

I. If > 0, then _____

II. if = 0, then _____

III. If < 0, then _____

EXAMPLE 1 Solve using the quadratic formula and determine the # of solutions.

a) $x^2 + 3x = 2$

b) $25x^2 - 18x = 12x - 9$

c) $-x^2 + 4x = 5$

EXAMPLE 2 Find the discriminant of the quadratic equation and give the number and type of solutions.

a) $x^2 - 8x + 17 = 0$ _____ _____

b) $x^2 - 8x + 16 = 0$ _____ _____

c) $x^2 - 8x + 15 = 0$ _____ _____

EXAMPLE 3 A juggler tosses a ball into the air. The ball leaves juggler's hand 4 feet above the ground and has an initial vertical velocity of 40 feet/second. The juggler catches the ball when it falls back to a height of 3 feet. How long is the ball in the air?

Object is launched/thrown Function: $h = -16t^2 + v_0t + h_0$