Algebra 2 Bellwork Tuesday, November 11, 2014

Use the Discriminant to determine the number and what type of solutions each Quadratic Equation has.

1. $75x^2 + 240x + 192 = 0$

2. $-6x^2 + 13x + 4 = 0$

3. $7x^2 - 3x + 8 = 0$

4. $10x^2 + 2x = 17$

5. $-4x^2 + 9x - 7 = 0$

6. An object is shot into the air. The following equation models the height of the object as a function of time.

$h(t) = -16t^2 + 80t + 75$

a) Does the object ever reach a height of 200 feet?

b) Does the object ever reach a height of 140 feet?

c) Does the object ever reach a height of 175 feet?

d) Does the object ever reach a height of 50 feet?

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Use the Discriminant to determine the number and what type of solutions each Quadratic Equation has.

1. $75x^2 + 240x + 192 = 0$

$b^2-4ac=0$ 1 REAL SOL

2. $-6x^2 + 13x + 4 = 0$

$b^2-4ac=265$ 2 REAL SOL'S

3. $7x^2 - 3x + 8 = 0$

$b^2-4ac=-215$ 0 REAL SOL'S = 2 imag sol's

4. $10x^2 + 2x = 17$

$10x^2+2x-17=0$

$b^2-4ac=684$ 2 REAL SOL'S

5. $-4x^2 + 9x - 7 = 0$

$b^2-4ac=-31$ 0 REAL SOL'S = 2 imag sol's

6. An object is shot into the air. The following equation models the height of the object as a function of time.

$h(t) = -16t^2 + 80t + 75$

a) Does the object ever reach a height of 200 feet?

$200 = -16t^2 + 80t + 75$

$0 = -16t^2 + 80t - 125$

$b^2-4ac=-1600$ NO

b) Does the object ever reach a height of 140 feet?

$140 = -16t^2 + 80t + 75$

$0 = -16t^2 + 80t - 65$

$b^2-4ac=2240$ YES

c) Does the object ever reach a height of 175 feet?

$175 = -16t^2 + 80t + 75$

$0 = -16t^2 + 80t - 100$

$b^2-4ac=0$ Yes THIS IS THE MAX HT.

d) Does the object ever reach a height of 50 feet?

$50 = -16t^2 + 80t + 75$

$0 = -16t^2 + 80t + 25$

$b^2-4ac=8000$ Yes