Algebra 2 Bellwork Thursday, November 6, 2014

- 1. A company manufactures chairs and wants to maximize their revenue. The following equation gives the revenue as a function of the number of chairs produced. $R(c) = -0.48c^2 + 192c - 8775$
- a) How many chairs should they produce in order to maximize their revenue?
- b) What is the maximum revenue?
- 2. An object is shot into the air from the ground. The following equation models the height of the object h as a function of the time t it has been in the air. $h(t) = -16t^2 + 120t$ Find the amount of time it will take to reach a height of 200 feet.
- 3. Find the exact coordinates of the VERTEX for this quadratic function: $y = 3x^2 13x + 8$
- 4. Find the EXACT solutions to this quadratic equation. $3(x+4)^2 7 = 68$

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- 1. A company manufactures chairs and wants to maximize their revenue. The following equation gives the revenue as a function of the number of chairs produced. $R(c) = -0.48c^2 + 192c - 8775$
- a) How many chairs should they produce in order to maximize their revenue?

$$C$$
-coord = $LOS = \frac{-192}{2(-.48)} = 200$

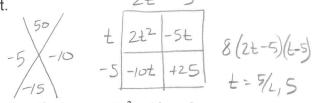
$$2(200) = -.48(200)^{2} + 192(200) - 8775$$

$$= $10,425.$$

2. An object is shot into the air from the ground. The following equation models the height of the object h as a function of the time t it has been in the air. $h(t) = -16t^2 + 120t$ Find the amount of time it will take to reach a height of 200 feet.

$$200 = -16t^2 + 120t$$

 $16t^2 - 120t + 200 = 0$
 $8(2t^2 - 15t + 25) = 0$



3. Find the exact coordinates of the VERTEX for this quadratic function: $y = 3x^2 - 13x + 8$

Vertex
$$\left(\frac{13}{6}, \frac{-73}{12}\right)$$

$$3(13/6)^{2} - 13(13/6) + 8$$

$$= 3(169/36) - 169/6 + 8 = \frac{169}{12} - \frac{169}{6} + 8$$

$$= 3(x+4)^{2} - 7 = 68$$

$$+ 7 + 7$$

$$= \frac{3(x+4)^{2}}{3} = \frac{75}{3}$$

$$= \frac{-73}{12}$$

4. Find the EXACT solutions to this quadratic equation.

$$X = -9, 1$$
 $X+4=\pm 5$ +5-4

$$\frac{3(x+4)^{2}}{3} = \frac{75}{3}$$

$$\frac{107}{12} - \frac{338}{12} + \frac{9}{1}$$

$$= -\frac{73}{12}$$