Honors Math II
Unit 4 day 7 notes

Name_____
Period_____Date_____

Bellwork

Use the quadratic formula to solve the equation.

$8x^2 + 16x - 10 = 0$

Name the different methods for solving a quadratic equation.

Given the following quadratic equations, solve algebraically (exact answer) and check with the graphing calculator.

1. $y = 7x^2 + 4x - 3$

x-intercept(s):
y-intercept:
vertex:

2. $y = 2x^2 - 4x - 6$

x-intercept(s):
y-intercept:
vertex:

3. $y = x^2 + 6x + 5$

x-intercept(s):
y-intercept:
vertex:

Solve the following problems with a graphing calculator.

4. You are placing a stone border along two sides of a rectangular garden that measures 9 yards by 12 yards. Your budget limits you to only enough stone to cover 72 square yards. How wide should the border be?

5. You decide to plant a bulb garden. You want the length of the rectangular garden to be 3 feet longer than its width. The bulbs that you have will cover 88 square feet. What should the length and width of the garden be?

6. When a gray kangaroo jumps, its path through the air can be modeled by $y = -0.0267x^2 + 0.8x$ where x is the kangaroo's horizontal distance traveled (in feet) and y is its corresponding height (in feet). How far can a gray kangaroo jump? What is its maximum height?

7. A parking lot that is a rectangle 180 feet long by 120 feet wide is to have its area doubled by adding the same distance x to the length and width. What is the value of x? What are the new dimensions of the parking lot?

8. The heat index H in degrees Fahrenheit can be modeled by $H = 0.0576t^2 - 7.588\,t + 319.929$ where t is the temperature (in degrees Fahrenheit) for relative humidity of 65% and $t \geq 70$. Find the temperature that has a heat index of 95 degrees Fahrenheit.