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| **Objectives:** **Simplifying Radicals.**

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| A square root is in **simplest form** when1. the radicand contains no perfect square factors2. the radicand is not a fraction3. there are no radicals in the denominator of a fraction.The square root of -1 is the imaginary number *i*.**Solve quadratic equations.**A **quadratic equation** is a polynomial equation of degree **two**, which can be written in the form *ax*2 + *bx + c*= 0, where *x* is a variable and *a, b* and*c* are constants with *a* ≠ 0.Options for solving quadratic equations:* If there is no *bx* term, solve directly for x.
* If all 3 terms of the model are present, put all three terms on one side of the equation in descending exponential order, factor, and set each factor equal to “0.”
* If all 3 terms of the model are present, put all three terms on one side of the equation in descending order, and, if the result is nonfactorable over the set of integers, use the quadratic formula.

Also, please know that 2nd degree functions in *x* will graph parabolas that will either be concave up or down. These quadratic functions will be of the form f(x) = y = ax2 + bx + c.Use your TI-84 calculator to graph these functions.Be able to identify the following:* Vertex
* Axis of Symmetry
* Type of Concavity (Up or Down)
* Minimum or Maximum Value
* Y-Intercept
* X-Intercept(s) if Any
* **Know that X-Intercepts are also known as zeros!**

***MONDAY (10.7.24)*****Discuss the previously assigned homework: Quadratic Applications (Handout).****Class Work/Homework:**1. toy rocket is fired into the air from the top of a barn. Its height (h) above the ground in yards after t seconds is given by the function h(t)=−5t2+10t+20.
2. What was the maximum height of the rocket?
3. How long was the rocket in the air before hitting the ground?
4. After how many seconds did the rocket hit the ground?
5. At what time(s) will the rocket be at a height of 22 yd?
6. The local park has a rectangular flower bed that measures 10 feet by 15 feet. The caretaker plans on doubling its area by adding a strip of uniform width around the flower bed. Determine the width of the strip.

Sketch a diagram to represent the situation.1. Solve 9x2 + 4x + 8 = 0. Give exact answers.
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***WEDNESDAY (10.9.24****)*

**Discuss** the previously assigned problems.

**Class Work/Homework:**

* Practice\_\_ Graphing Parabolas (Handout)

***FRIDAY (10.11.24****)* **B-DAY, NO CLASS**