***MONDAY (9.23.24)***

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| **Objectives:**  **Simplifying Radicals.**   |  | | --- | | A square root is in **simplest form** when 1. the radicand contains no perfect square factors 2. the radicand is not a fraction 3. 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 ax2 + 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.     **Discuss the previously assigned homework:** | |
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1. Simplify √(-4).
2. Simplify √(- 48).
3. Simplify √(- 200).
4. Solve 4x2 = 16.
5. Solve 4x2 = - 16.
6. Solve 2x2 + 6 = 36.
7. Solve (x + 7) (x – 5) = 0.
8. Solve x2 + 7x + 12 = 0.
9. Solve x2 +2x – 15 = 0.
10. Solve 2x2 – 10x = -3.
11. Solve x2 – 6x + 13 **= 0. (Note: = 0 should have been on the previous copy.)**

**Class Work/Homework:**

1. Solve 2x2 + x + 10 = 0.
2. The difference between a number and its square is 72. What is the number?
3. If f(x) = x2 − 6x + 9 and f(k) =1, find the value(s) of *k*.
4. If f(x) = 3x2 + 2x + 1 and f(a) = -5, find the value(s) of *a*.
5. A rock is thrown upward from the top of a 112-foot-high cliff overlooking the ocean at a speed of 96 feet per second. The rock’s height above ocean can be modeled by the equation, **H(t)=−16t2+96t+112.**

a. When does the rock reach its maximum height? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. What is the maximum height of the rock? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. When does the rock hit the ocean? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***WEDNESDAY (9.27.24****)*

**Discuss** the previously assigned problems.

**Class Work/Homework:** Quadratic Applications (Handout)

***FRIDAY (9.27.24****)* B-DAY, NO CLASS