Integrated Math 3   Name: _____

Unit 6: Polynomials

6.6   Date: _____   Period:_____

Objective: to solve simultaneous functions using the graphing calculator.

Warm-up:

1. Factor $x^2 - 6x + 5$

2. Factor $x^3 - 2x^2 - 3x + 6$

3. Solve $(x^2 - 1)(x^2 - 2x + 1) = 0$

4. What does a solution to an equation tell you?

Steps to solving using a graphing calculator:

1. Type the left side of the equation into the graphing calculator (**Y₁**)

2. Type the right side of the equation into the graphing calculator (**Y₂**)

   Note: Be sure to put parenthesis around both the numerator & denominator for fractions.

3. Graph the equations

4. **2ⁿᵈ → Calc → Intersect….** Then follow the prompts to give the calculator a restricted domain.

Example 1: Solve each of the following using your graphing calculator (round to the nearest thousandth).

a. $\sqrt{x + 5} = 5 - \sqrt{x}$

b. $\dfrac{3x+5}{x-2} = \dfrac{x-6}{5x+1}$

c. $\dfrac{1}{2}x^2 - 5 = -x + 3$

d. $\log(x + 7) = |2x + 5| - 3$

e. $\sqrt{3x + 2} = \sqrt{6x + 4}$

f. $3^{x+5} = 3\ln(x + 6) + 2$

g. $-\frac{1}{4}|3x - 5| = 2\log(3 - x)$

h. $\sqrt{3x - 2} = 4 - \sqrt{2x - 3}$

Reflect: What are the key steps to remember from today?

Practice: Solve each of the following using your graphing calculator (round to the nearest thousandth).

a. $x^3 = x^2 - 1$

b. $\sqrt{3x - 2} = 4 - \sqrt{2x - 3}$

c. $3^{x+5} = 3\ln(x + 6) + 2$

d. $-\frac{1}{4}|3x - 5| = 2\log(3 - x)$

e. $\frac{1}{2}x^2 - 5 = -x - 1$

f. $\sqrt{3x + 2} = \sqrt{6x + 4}$