Homework 4.8: Solving Polynomials Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Math 3

**Directions:** Without using a calculator, find all linear factors and then determine all roots of the function. Sketch a graph with this information.

1. f(x) = x3 – 5x2 Factors: Roots: Graph:



1. f(x) = x4 - 16 Factors: Roots: Graph:



1. f(x) = x3 – 2x2 + 9x – 18 Factors: Roots: Graph:



**Directions:** Using the given factor, find all remaining factors and then determine all roots of the function. Sketch a graph with this information.

1. f(x) = x3 + 5x2 +2 x – 8 Factor: (x – 1) Roots: Graph:
2. f(x) = x3 – 2x2 + 9x – 18 Factor: (x – 2) Roots: Graph:



1. f(x) = x3 – 19x – 30 Factor: (x + 3) Roots: Graph:



1. f(x) = x3 – 2x + 1 Factor: (x – 1) Roots: Graph:

**Hint:** Use Quad Formula to solve for missing roots!

**Directions:** Solve for x.

1. 2(x – 2)(x + 1)2 = 0
2. Log2x = 4
3. Log24 = x
4. $\frac{1}{x}=6$
5. X3 – 1 = 0 (**Hint:** Use SOAP to factor and Quadratic Formula to solve)