**Graphing Calculator Review for Chapter 2 Test 2015**

1. List all the possible rational roots of the function **.**  Using a graphing **calculator,** check to see which ones work. Solve for x. f(x)= 6x4 – 11x3 + 8x2 – 33x – 30

2. Using a **graphing calculator**, **how many** real and imaginary roots does the function

f(x) = 5x3 -7x + 6 have? Name the real roots(s)

3. List all the possible rational roots of the function- Using a graphing **calculator,** check to see which ones work. Solve for x. f(x)= 6x4 – 11x3 – 51x2 + 99x – 27

4. Using a graphing calculator, graph the function G(x) = 0.125x3 – x2 + 1.5x + 1

(Be accurate to 3 decimal) Use interval notation.

Find the :

Zeros:

Local-Maximum point(s):

Local-Minimum point(s):

y-intercept:

Increasing interval(s):

Decreasing interval(s):

*End behavior:* as *x* → +∞, **f**(*x*) → \_\_\_\_\_\_\_\_

as *x* → –∞, **f**(*x*) → \_\_\_\_\_\_\_\_

**Answers:**

1. 36 Possible roots: ±1, ±2, ±3, ±5, ±6, ±10, ±15, ±30, ±1/2, ±3/2, ±5/2, ±15/2, ±1/3, ±2/3, ±5/3, ±10/3, ±1/6, ±5/6  
     
   In calculator, x = 5/2 and x = -2/3 are roots.

After using synthetic division twice, we get 6x2 + 18 = 0 so the remaining roots are x = ±i√3

1. 1 real root (-1.486, 0)  
   2 imaginary roots
2. 20 possible roots: ±1, ±3, ±9, ±27, ±1/2, ±3/2, ±9/2, ±27/2, ±1/3, ±1/6  
     
   In calculator, x = -3, 3, 3/2, 1/3 are roots.

1. Zeros: (-0.494, 0) (2.890, 0) (5.604, 0)

Maximum point(s): (0.903, 1.631)

Minimum point(s): (4.431, -1.113)

y-intercept: (0, 1)

Increasing interval(s): (-∞, 0.903) (4.431, ∞)

Decreasing interval(s): (0.903, 4.431)

*End behavior:* as *x* → +∞, **f**(*x*) → +∞

as *x* → –∞, **f**(*x*) → -∞