Chapter 5, Graphing Calculator Activities **Name:**

1. Graph $f(x) = x^2 - 15x - 10$.
   a) How many *x*-intercepts do you see?
   b) Zoom out. Now how many *x*-intercepts do you see?
   c) What type of polynomial function is $f(x)$?
   d) Find the zeros of the function.
   e) Evaluate $f(-3)$ numerically and graphically.

2. Graph $f(x) = 0.02x^3 - 0.2x^2 - 1.5x$.
   a) How many *x*-intercepts do you see?
   b) Zoom out. Now how many *x*-intercepts do you see?
   c) What type of polynomial function is $f(x)$?
   d) Find the zeros of the function.
   e) Evaluate $f(18)$ numerically and graphically.

3. Graph $f(x) = x^3 - 11x^2 - 12x$.
   a) Determine an appropriate window that displays a complete graph.
   (Note: There are 3 zeros.)
   Xmin _____ Xmax _____ Ymin _____ Ymax _____
   b) Evaluate $f(-6)$.
   c) Find x if $f(x) = 0$.

4. Factor $x^3 - 23x^2 + 50x + 200$ by finding the zeros graphically.

5. Factor $x^4 - 13x^2 + 36$ by finding the zeros numerically.

6. An athlete measures his heart rate after exercising and records the following data.

Minutes	0	1	2	3	4	5
BPM	202	170	150	125	105	95

   a) Make a scatterplot of the data.
   b) If the function $h(x) = 1.875x^2 - 30x + 200$ models a typical athlete's heart rate *x* minutes after exercise, graph $h(x)$ for $0 \le x \le 8$.
   c) How do the data and the model compare?
   d) Determine an appropriate window for the model.
   e) Use the model to determine what the athlete's heart rate would be after 4 minutes.