**The Birthday Polynomial Project**

Due date: Monday 03/21 by the beginning of class

Grade: 50 points (10 pt deduction for each day late)

Create a Birthday Polynomial

Use the digits of the month, day and 4 digit year of your birth – in order – as the roots of the polynomial (can be positive or negative). (For example: If your birthday is August 13, 1991, then use the digits 8131991 in that order)

The multiplicity of each root must be between 1 and 3 and you must use one of each multiplicity

(Ex. ) $f\left(x\right)=\left(x-8\right)^{2}\left(x+13\right)\left(x+19\right)^{3}\left(x+9\right)^{2}(x-1)$

Change the signs of the roots to make the most interesting graph you can – one that in some way reflects you.

Analyze the Polynomial

Find:

1) domain and range

2) the roots and their multiplicity

3) degree

4) describe the end behavior using formal notation

5) make a sketch using the roots and multiplicity

Make a Presentation of Your Birthday Polynomial

Be original and creative. How does the graph of this polynomial reflect you? The other option is to come up with a story to go along with this graph and polynomial. You will present a written explanation of how the polynomial reflects you or the story it represents. You will also need to turn in a neatly created sketch of the graph on a poster or something equivalent.

Grading

The Birthday Polynomial is accurate – 20 points

The Analysis is complete and accurate – 20 points

Overall presentation is creative, interesting, neat and colorful – 10 points