Algebra II   -   Mr. Reed   **First Semester Final Project**

The Birthday Polynomial Project

Due: Friday, January 25, 2012 at Noon – NO LATE PROJECTS!!!

<u>Objective</u>:   To create, characterize, and graph a polynomial function that reflects you!

<u>Process</u>:

1. Identify IN ORDER the digits of the month (1 or 2 digits), day (1 or 2 digits), and year (4 digits) of your birthday. For example, I was born on December 25, 1954, so my ordered birthday digits are "12251954." (The most number of digits you could have is 8, and the least number of digits you could have is 6).

2. Create a polynomial using your digits in order. Again, for example, my polynomial *could* be
    $x^7 - 2x^6 + 2x^5 - 5x^4 - x^3 + 9x^2 + 5x - 4$.

3. Experiment with the shape of your birthday polynomial by changing the signs of your various terms. Try to create a polynomial function with an interesting shape and some turning points. Be creative! Find a polynomial having a graph that expresses you.

4. Analyze your polynomial by finding these characteristics:
    a. Domain and range
    b. The y-intercept
    c. All real number zeros
    d. All relative minimums and maximums
    e. A description of the end behavior

<u>Product</u>:

5. Make a presentation of your polynomial. Again: be creative! How does the polynomial reflect the person you are? Be colorful, but be neat! Be artistic, but be accurate!

    <u>At a minimum</u>, your presentation should include a visual representation of the graph of your polynomial and a written statement of your findings in Part 4, above.

<u>Assessment</u>:

6. Your grade will be weighted as a QUIZ score for inclusion in the second nine weeks' grading period. Your score will be based on three (3) criteria: (1) the accuracy of your polynomial (can you follow instructions?); (2) the completeness and accuracy of your analysis (do you know what you need to know about polynomial functions?); and (3) the accuracy, neatness, originality, and creativity of your presentation (can you artistically convince me that you ARE your polynomial?)