**Math Analysis Honors Unit 12**

**Can You . . .**

* Divide polynomials using long or synthetic division
* Given a polynomial function and a divisor , rewrite as
* Given a polynomial function and a linear divisor , find the remainder without dividing
* Given a polynomial function determine possible rational zeros and which to test
* Use division to test for zeros and find factors
* Find irrational factors of a quadratic function in exact form
* Determine when to use the Bounds Test
* Determine if a given value is a lower or upper bound of the zeros of a polynomial function
* Draw a graph given the factors of a polynomial function
* Write a possible polynomial function given its graph
* Find all zeros, including complex zeros
* Write a possible equation for a polynomial function given its zeros, including complex zeros
* Use derivatives to find critical points of polynomial functions.
* State intervals of increasing and decreasing.
* State intervals on concave down and concave up.
* Given a rational function find. . .
  + Domain
  + x and y intercepts
  + Vertical asymptotes
  + Holes
  + Horizontal asymptotes
  + Slant asymptotes