Name_____

ALGEBRA II JOURNAL
Polynomials & Function Operations

1. (a) A polynomial with both ends going downward will have an _____ *(even/odd)* degree and _____ *(+/-)* leading coefficient.

   (b) A polynomial with both ends going upward will have an _____ degree and _____ leading coefficient.

   (c) A polynomial with its left end going upward and its right end going downward will have an _____ degree and _____ leading coefficient..

   (d) A polynomial with its left end going downward and its right end going upward will have an _____ degree and _____ leading coefficient.

2. To find the real zeros of a polynomial with your calculator you should enter the function in $f_1(x)$ in your calculator and then use _____ .

3. Relative maximums and minimums are _____ _____ while absolute maximums and minimums are _____ _____ .

4. When identifying the intervals where a function is increasing or decreasing, you should list the _____-coordinates where the intervals _____ and _____.

5. To multiply a binomial times a trinomial you should_____ _____ .

6. (a) The first thing which should be tried when factoring any problem is _____ _____ .

   (b) List the methods which should be used to factor a polynomial with the given number of terms.

   2 terms _____

   3 terms _____

   4 terms _____

   (c) In order for factoring by grouping to work, _____ _____ must result in the second step of the process.

7. (a) Before performing long or synthetic division, you must check for _____ _____ .

   (b) Synthetic division can be performed when _____ .

8. (a) The symbols $f\left[g(x)\right]$ is pronounced as _____ .

(b) $f\left[g(x)\right]$ is found by _____ .

(c) A second notation for $f\left[g(x)\right]$ is _____ .

9. (a) A function is _____

_____ .

(b) You can determine whether the ***graph*** of a relation is a function by _____

_____ .

10. (a) An inverse function is created by _____ .

(b) Given the ***graph*** of the ***original*** function, you can determine whether its inverse will be a function by _____ .

11. (a) Given the ***graphs*** of two relations, you can determine if they are inverses of each other by

_____ .

(b) Given the ***equations*** of two relations, you can determine if they are inverses of each other by

_____ .

12. List the following rules, facts, or formulas.

a) Rules for factoring the following:

$a^2 - b^2 =$_____ $a^3 - b^3 =$ _____

$a^2 + b^2 =$_____ $a^3 + b^3 =$_____

b) Steps for finding the inverse equation of a function