Review Assignment – Methods of Factoring:

*Provide an example for each method (you may use your notes, homework, or textbook to help find examples)*

1. Look for a greatest common factor and factor it out in front.

Example: *(use a polynomial of degree 3 for your example and factor it fully)*

1. Factor a quadratic, , by looking for two numbers that multiply to c and add up to b.

Example:

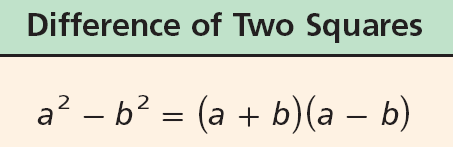
1. For a quadratic with a negative leading coefficient, , factor the negative out in front, and then continue factoring the quadratic.

Example: *(once you pull the negative out make sure you factor your quadratic fully)*

1. For a quadratic where the leading coefficient cannot be factored out, , find factors of *a* and factors of *c* that when multiplied together add up to *b*.

Example:

1. Follow the difference of squares method:



\*And this method can work for other numbers if you use square root:

Example: *(use a quadratic with a leading coefficient greater than 1 for your example)*

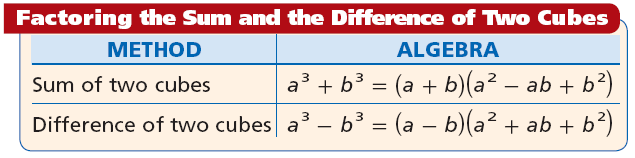
1. To factor a polynomial, find the zeros by setting the expression equal to zero, solve for *x* (find the solutions, roots). *x* minus the root will be a factor, .

Example:

1. Factor by grouping

Example:

1. Follow the sum and difference of cubes method (SOPPS it up)



Example:

1. Use the rational root theorem (and help from a graphing calculator if necessary) to find the rational roots. Divide your polynomial, , by using synthetic division. The quotient, , will be another factor: . Factor down to find all the factors of (either perform synthetic division again for another root, use another factoring method, or use the quadratic formula to find irrational or complex roots).

Example: