ALGEBRA
A General Factoring Strategy

1. READ THE EXPRESSION

2. Factor out the Greatest Common Factor (GCF)

$$axz + ax + a = a(xz + x + 1)$$

3. Binomial

   a. Sum of Squares

   $$A^2 + B^2: \ DOESNOT\ FACTOR\ UNDER\ REAL\ NUMBERS$$

   b. Difference of Squares

   $$A^2 - B^2 = (A + B)(A - B)$$

   c. Sum of Cubes

   $$A^3 + B^3 = (A + B)(A^2 - AB + B^2)$$

   d. Difference of Cubes

   $$A^3 - B^3 = (A - B)(A^2 + AB + B^2)$$

4. Trinomial [the form is $ax^2 + bx + c$]

   a. Trial & Error – best when leading coefficient *"a"* is a 1

   b. AC Method – best when leading coefficient *"a"* is not a 1

5. Polynomial (four or more terms) – use Grouping

$$ax + bx + ay + by$$
$$(ax + bx) + (ay + by)$$
$$x(a + b) + y(a + b)$$
$$(a + b)(x + y)$$