

Factoring  $ax^2+bx+c$  if 'a' is not 1 and can't be factored out

1. Check for a common factor
2. Multiply 'a' by 'c'
3. Find two integers who have a product of this number ( $a \times c$ ) and a sum of 'b'
4. Break up the middle term into the integers that satisfy the product and sum
5. Factor by grouping

Factoring  $ax^2+bx+c$  if 'a' is 1 or can be factored out

1. Check for a common factor
2. Find two integers who have a product of 'c' and a sum of 'b'
3. Put those integers into  $(x+r)(x+s)$  for 'r' and 's'

# Chapter 5

## Common Factoring

1. Determine the greatest common factor of all terms in the polynomial
2. Take out the greatest common factor as the first factor
3. Divide each term in the polynomial by the greatest common factor to get the second factor.

## Multiplying Polynomials

**FOIL METHOD:** You can find the product of two binomials by multiplying each term in the first binomial by each term in the second binomial. Then simplify by collecting like terms

First Outside Inside Last

## Special Products

**Difference of Squares:**  
 $a^2-b^2 = (a-b)(a+b)$

**Perfect Square Trinomial:**  
 $a^2+2ab+b^2 = (a+b)^2$   
 $a^2-2ab+b^2 = (a-b)^2$