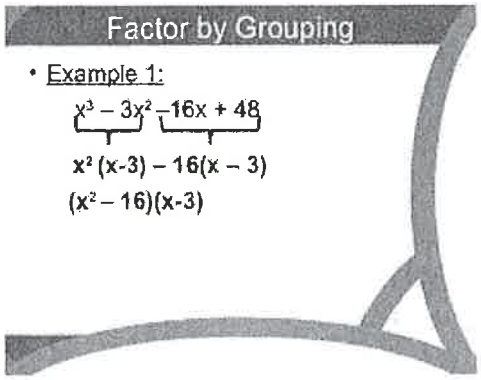
Name: _____

Factoring by Grouping Notes

For 4 terms, check for factor by grouping



Grouping

- Draw a line to group the 1st two terms and the last 2 terms

  ax + bx + ay + by

- Factor by GCF for each pair (see above)

  x(a + b) + y (a + b)

  ***When 3rd term is negative, factor out a negative # !!!**

- Put #/variables in front of parenthesis together and the common factor together as is for final factors

  (x + y)(a + b)

1. $(10x^2 + 5x)(+ 4x + 2)$

$5x(2x+1) + 2(2x+1)$

$(5x+2)(2x+1)$

2. $(x^3 + 2x^2)(- 4x - 8)$

$x^2(x+2) - 4(x+2)$

$(x^2-4)(x+2)$

3. $c^4 + c^3 - c^2 - c$

$c^3(c+1) - c(c+1)$

$(c^3-c)(c+1)$

$c(c^2-1)(c+1)$

4. $3x^3 + 2x^2 - 27x - 18$

$x^2(3x+2) - 9(3x+2)$

$(x^2-9)(3x+2)$

5. $28ab + 16a + 35b^2 + 20b$

$4a(7b+4) + 5b(7b+4)$

$(4a+5b)(7b+4)$

6. $40xy^3 - 10y^2 - 32x^2y + 8x$

$10y^2(4xy-1) - 8x(4xy-1)$

$(10y^2 - 8x)(4xy-1)$

$2(5y^2-4x)(4xy-1$