



# Factoring by Grouping

(Video Notes)

[Video Link](#)

# Factoring by Grouping

What background knowledge will I need?

- How to multiply a binomial by a binomial (FOIL or Geometric Model)
- How to factor by GCF

Expand:

$(2x + 3y)(3x - 4)$

$2x(3x - 4) + 3y(3x - 4)$

$6x^2 - 8x + 9xy - 12y$

$6x^2 - 8x + 9xy - 12y$

GCF =  $2x$       GCF =  $3y$

$2x(3x - 4) + 3y(3x - 4)$

GCF:  $(3x - 4)$

$(3x - 4)(2x + 3y)$

Factor:

$$4x^2 + 9x + 8xy + 18y$$

$$x(4x+9) + 2y(4x+9)$$

$$(4x+9)(x+2y)$$

equivalent

$$4x^2 + 9x + 8xy + 18y$$

$$4x^2 + 8xy + 9x + 18y$$

$$4x(x+2y) + 9(x+2y)$$

$$(x+2y)(4x+9)$$

Factor:

$$a^2b + 6abc - 7a - 42c$$

$$a^2b + 6abc - 7a - 42c$$

$$ab(a+6c) - 7(a+6c)$$

$$(a+6c)(ab-7)$$