

Factoring By Grouping

Steps:

- 1) Your clue for factoring by grouping is usually **FOUR TERMS**
- 2) Separate out the 4 terms into **TWO** groups.
BIG PLUS SIGN IN BETWEEN
- 3) factor each group using the gcf
- 4) Hopefully each group will have a factor in common.
- 5) GCF, write this down. Put parenthesis next to it.
- 6) Reduce each term by the GCF.
- 7) Check to see if you can factor further.

Factor Completely: $(18x^2 - 15xy) + (12x - 10y)$

$$3x(\underline{6x - 5y}) + 2(\underline{6x - 5y})$$

$$(3x + 2)(6x - 5y)$$

Factor Completely: $(12x^2 - 15xy) - (16x - 20y)$

~~(A)~~ $(4x - 5y)(3x + 4)$

[B] $(4x + 5y)(3x - 4)$

[C] $(4x - 5y)(3x - 4)$

[D] $(4x + 5y)(3x + 4)$

$$3x(4x - 5y) + 4(4x - 5y)$$
$$\boxed{(3x + 4)(4x - 5y)}$$

Factor Completely

$$(4x^6 - 12x^4) + (5x^3 - 15x)$$

[A] $x(4x^5 - 12x^3 + 5x - 15)$

[B] $x(4x^3 + 5)(x^2 - 3)$

[C] $4x^4(x^2 - 3) + 5x(x^2 + 3)$

[D] $(4x^4 + 5x)(x^2 - 3)$

$$4x^4(x^2 - 3) + 5x(x^2 - 3)$$

$$(4x^4 + 5x)(x^2 - 3)$$

$$x(4x^3 + 5)(x^2 - 3)$$

Factor Completely: $(gh + 4g) + (5h + 20)$

$$g(h+4) + 5(h+4)$$

$$(g+5)(h+4)$$

Factor Completely

$$(3x^2 + 15x) + (x + 5)$$

~~(3x + 1)(x + 5)~~

[C] $(3x + 5)(x + 1)$

[B] $3 + (x + 1)(x + 5)$

[D] $x(3x + 5) + 5$

$$3x(x + 5) + 1(x + 5)$$

$$(3x + 1)(x + 5)$$

$$(3x^2 + 12x) + (7x + 28)$$

[A] $3 + (x + 7)(x + 4)$

[B] $(3x + 7)(x + 4)$

[C] $(3x + 4)(x + 7)$

[D] $x(3x + 4) + 28$

$$3x(x + 4) + 7(x + 4)$$

$$(3x + 7)(x + 4)$$

$$\textcircled{26} (9mz - 4nc) + (3mc - 12nz)$$

$$(-4nc - 12nz) + (9mz + 3mc)$$

$$-4n(c + 3z) + 3m(3z + c)$$

$$(3m - 4n)(c + 3z)$$