

FACToring

* 1. GCF (GREATEST COMMON FACTOR)

2. GROUPING (4 OR MORE TERMS)

3. P-S-D METHOD (FORM: $x^2 + bx + c$)

4. KEY # METHOD (FORM: $ax^2 + bx + c$)

5. DIFF. OF 2 SQUARES (2 TERMS WITH A MINUS BETWEEN THEM)
↑ "DOTS"

6. DIFF OF 2 CUBES (2 TERMS WITH A MINUS BETWEEN THEM)

7. SUM OF 2 CUBES (2 TERMS WITH A PLUS BETWEEN THEM)

① $9x - 81$

$9(x - 9)$

$9(x - 9)$

② $10x^2 + 25x$

$5x(2x + 5)$

③

$-3x^3 + 12x^2 - 9x$

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

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

NOTE: IF YOUR FIRST TERM IS NEGATIVE, ALWAYS FACTOR OUT A NEGATIVE

④

$7x(\underline{3x+2}) + 2(\underline{3x+2})$

$(3x+2)(7x+2)$

⑤ $(3b+2)(\underline{b+1}) + (5b+2)(\underline{b+1})$

$(b+1)(3b+2+5b+2)$

$(b+1)(8b+4)$

$(b+1)4(2b+1)$

$4(b+1)(2b+1)$

⑥ $3x+ax-3y-ay$

~~$x(3+a)$~~

$x(3+a) - y(3+a)$

$(3+a)(x-y)$

⑦ $4a^2 - 28a - 8a + 56$

$4(a^2 - 7a - 2a + 14)$

$4[a(a-7) - 2(a-7)]$

$4(a-7)(a-2)$

⑧ $36x^2 - 18xy - 4xy + 2y^2$

$2(18x^2 - 9xy - 2xy + y^2)$

$2[9x(2x-y) - y(2x-y)]$

$2(2x-y)(9x-y)$