

FACTORING POLYNOMIALS

ATTACK STRATEGY

Prep Step

Remove all parentheses ()

Combine like terms

If quadratic, put in Standard Form: $Ax^2 + Bx + C$

Step 1. ALWAYS factor out a GCF if possible.

If squared term is negative, make it positive by factoring out -GCF or -1.

Step 2. How many terms?

- a) Two terms (Special Products)
 - 1) Sum of Squares ($a^2 + b^2$) → NOT FACTORABLE!
 - 2) Difference of Squares ($a^2 - b^2$) → $(a + b)(a - b)$
 - 3) Sum of Cubes ($a^3 + b^3$) → $(a + b)(a^2 - ab + b^2)$
 - 4) Difference of Cubes ($a^3 - b^3$) → $(a - b)(a^2 + ab + b^2)$

- b) Three terms
 - 1) Check first to see if it's a perfect square trinomial.
 - 2) Squared term coefficient = 1 → factor by trial & error.
 - 3) Squared term coefficient $\neq 1$ → trial & error or A•C Method

- c) Four terms → Try Factoring by Grouping.

Step 3. Can you factor further?