

Factoring Trinomials of the form

$$ax^2 + bx + c$$

Method 1: Using Trial-and-Error

1. First terms should have a product of ax^2 .
2. Last terms should have a product of c .
3. The sum of the 'inner' and 'outer' products should equal bx . If not, got back to steps 1 and 2 and try a different combination, until step 3 checks.

Method 2: Product/Sum Method

1. Write the trinomial in form $ax^2 + bx + c = 0$.
Find a pair of numbers whose product is ac and whose sum is b . Call these numbers r and s .
2. Rewrite the trinomial as a sum of 4 terms,
 $ax^2 + rx + sx + c = 0$. Use the 'grouping' method of factoring .
 - a) Group the 1st two terms together and factor out a GCF.
 - b) Group the last two terms together and factor out a GCF so that the binomial factor is the same as a factor from the 1st term terms.
 - c) Factor out the group GCF and write the second factor.