

A FACTORING STRATEGY

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1. Write the polynomial in descending powers of the variable.
2. Factor out the GCF.
3. If necessary, factor out -1 so that the coefficient of the leading term is positive.

Does it factor as a...

1. Difference of two squares?
 $F^2 - L^2 = (F + L)(F - L)$
2. Sum of two cubes?
 $F^3 + L^3 = (F + L)(F^2 - FL + L^2)$
3. Difference of two cubes?
 $F^3 - L^3 = (F - L)(F^2 + FL + L^2)$

Can the polynomial be factored by grouping?

Does the polynomial have exactly 2 terms?

Yes

No

Does the polynomial have exactly 3 terms?

No

Yes

Does it factor as a perfect square trinomial?
 $F^2 \pm 2FL + L^2 = (F \pm L)^2$

No

Is the lead coefficient 1?

Yes

No

Can you find two integers whose product is the last term and whose sum is the coefficient of the middle term?

Can the trinomial be factored ...
1. Using the trial-and-check method?
2. Using the key number and grouping?

Can any factors be factored further?
If so, factor them completely.

Check by multiplying.



Note: If it can't be factored at all, it's prime.

