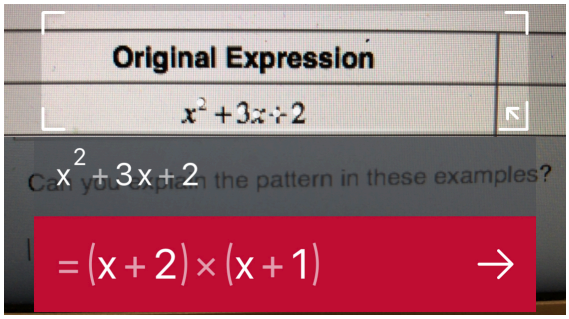
 Name: _____

Factoring Trinomials



Remember that factoring is the opposite of multiplying.

Let's **LOOK** for a pattern…

Using Photomath, evaluate each original expression, then write the factored form.

Original Expression	Factored Form (the answer)
x^2+3x+2	$(x+2)(x+1)$
x^2+4x+3	$(x+3)(x+1)$
x^2+5x+4	$(x+4)(x+1)$
x^2+5x+6	$(x+2)(x+3)$
x^2+7x+6	$(x+6)(x+1)$
$x^2+10x+21$	$(x+7)(x+3)$
$x^2-10x+24$	$(x-6)(x-4)$
$x^2-13x+36$	$(x-9)(x-4)$
$x^2-15x+56$	$(x-7)(x-8)$
x^2-4x-5	$(x-5)(x+1)$
$x^2-3x-10$	$(x-5)(x+2)$
$x^2-3x-28$	$(x-7)(x+4)$

Can you explain the pattern in these examples? Write your thoughts below.

* the factors multiply to give the final term of the original expression
* the factors add to give the coefficient of the middle term in original expression

Example 1

Factor each expression, if possible.

a) $x^2 + 10x + 21$ (+ and ×)

$= (x+7)(x+3)$ or $= (x+3)(x+7)$

Remember:
- look for factors that...
  - add to give final term
  - multiply to give coefficient of middle term

b) $x^2 + 13x + 42$

$= (x+7)(x+6)$

c) $x^2 + 18x + 72$

$= (x+6)(x+12)$

list factors
2, 36
3, 24
4, 18
6, 12

d) $x^2 - 15x + 54$

$= (x-6)(x-9)$

Opportunity to Learn

Use this IXL page to master the concept we discussed above. Earn a "Smart Score" of 90% or better. To follow links, go to Edsby and view this page as PDF file.

P.3 Factor quadratics with a leading coefficient of 1