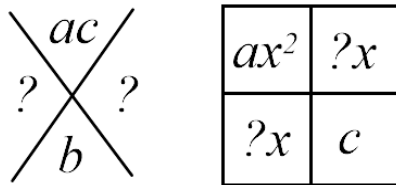
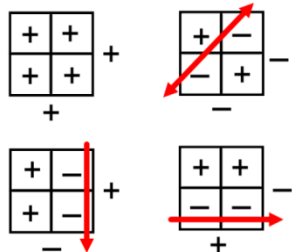


Factoring

leading coefficient $\neq 1$



After the box is set up, pull out the GCF from each row and column. What's on the outside of the box forms the factors.



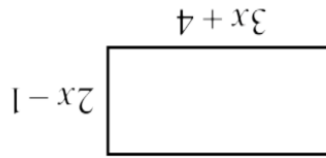
FOIL
to check!

Example 4

A square with a side of $(4x-3)$ has an area of 81 square units. Write a quadratic equation to model the problem and solve for x .

Example 3 Solving real world problems by factoring

The rectangle shown has an area of 30 square units. Write an equation that models the problem and solve by factoring to determine the dimensions of the rectangle.

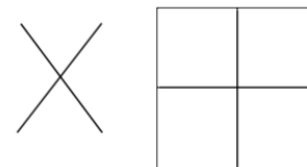
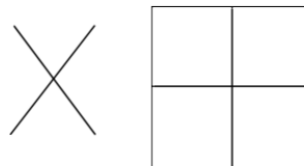


Example 1 Factoring ax^2+bx+c when $a \neq 1$

- Step 1: a must be positive to use the Box Method, so if $a < 0$, factor out -1 .
- Step 2: Factor out a GCF if one exists.
- Step 3: Use the Box Method to factor into intercept form $a(x-p)(x-q)$.
- Step 4: Check the signs of your factors.

A] $-2x^2 + 5x + 12$

B] $9x^2 + 6x - 24$



Example 2 Solving quadratic equations by factoring

- Step 1. Make sure the equation is in standard form $ax^2 + bx + c = 0$; a must be positive.
- Step 2. Divide out any common factors.
- Step 3. Factor completely.
- Step 4. Set each factor equal to zero and solve for x .

$$10x^2 - 40x = 32 + 36x$$