Lesson 5: Expanding Quadratics

By the end of this lesson you should be able to
- take a quadratic in factored form and expand it to standard form

When a quadratic is in factored form, we often need it to be in its expanded form.

We can expand a quadratic by using the distributive property

(FOIL)

First Outside Inside Last

Example 1:
Expand and simplify the following.
Use the FOIL method (First Outside Inside Last)

a) (2x +3)(x-2)

$= 2x^2 - 4x + 3x - 6$

$= 2x^2 - 1x - 6$

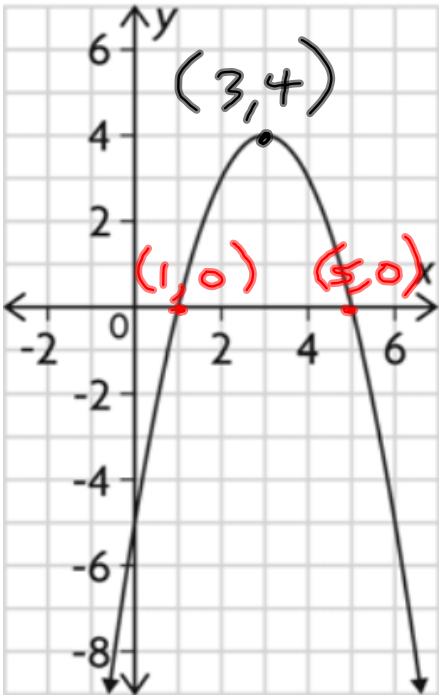
b) (2x-1)(x-3)

$= 2x^2 - 6x - 1x + 3$

$= 2x^2 - 7x + 3$

Example 2:

Going to the standard form ($y = ax^2 + bx + c$) from a graph



Use the factored form to enter the points from your graph

x int.

$y = a(x-r)(x-s)$

$y = a(x-1)(x-5)$

$4 = a(3-1)(3-5)$

$4 = a(2)(-2)$

$\frac{4}{-4} = \frac{-4a}{-4}$

$-1 = a$

$\therefore y = -1(x-1)(x-5)$

$y = -1[x^2 - 5x - 1x + 5]$

$y = -1(x^2 - 6x + 5)$

$y = -x^2 + 6x - 5$