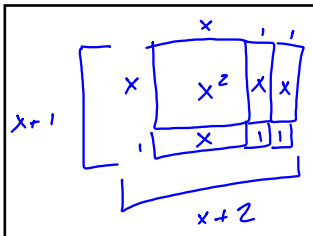
10.6 Expanded form and the line of symmetry

$x(x+c) = x^2 + cx$

foil

$y = (x-a)(x-b)$

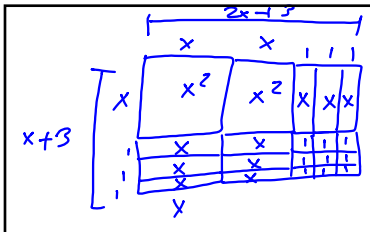


$x^2 + 3x + 2$

$(x+1)(x+2)$

$x^2 + 2x + x + 2$

$x^2 + 3x + 2$



$2x^2 + 9x + 9$

$y = (x-a)(x-b)$

Intercept form where a, b are x-ints

when we FOIL we change Intercept form to standard form

$y = ax^2 + bx + c$

FOIL to Standard form

$y = ax^2 + bx + c$

Now find Line of symmetry

$x = -\frac{b}{2a}$

Vertex use x value of line of symmetry and find y

y-int is c in standard form

$y = (x-5)(2x+3)$

$x - 5 = 0$ $\quad 2x + 3 = 0$

$x = 5$ $\quad 2x = -3$

$x = -\frac{3}{2}$

x-ints $5, -\frac{3}{2}$

$y = 2x^2 + 3x - 10x - 15$

$y = 2x^2 - 7x - 15$

Like Terms
- same variable
- same exponent

Line of Symmetry

$x = -\frac{b}{2a}$

$x = -\frac{-7}{2(2)} = \frac{7}{4}$