Monday, September 25, 2017 9:49 AM

3.6 (Part 1) - Expanding Binomials

multiplying

Polynomial: multi-termed expression with whole number exponents.

ex $3x^2 - 2x + 17$ ← polynomial

$3x^{\frac{1}{2}} - 2x + 17$ ← not a polynomial

Recall:
$(+)(+) = +$
$(-)(-) = +$ } like signs are positive
$(+)(-) = -$
$(-)(+) = -$ } unlike signs are negative

Expand $(x+4)(x-3)$.

a) method 1 - Area model

	x	-3
x	x^2	$-3x$
$+4$	$+4x$	-12

C.L.T. (collect like terms)

$x^2 - 3x + 4x - 12$

$x^2 + x - 12$

expanding →

So... $(x+4)(x-3) = x^2 + x - 12$

b) method 2 - FOIL * most common method *

First Outside Inside Last

$(x+4)(x-3)$

O
F
I
L

→ can also think of this method as "feed the chickens" with two farmers.

$x^2 - 3x + 4x - 12$ C.L.T.

$= x^2 + x - 12$

Try more examples...

Expand...

ex $(8-x)$ → means → $(8-x)(8-x)$

$= 64 - 8x - 8x + x^2$ CLT

rearrange in decreasing x order
* watch to keep sign in front *

$= 64 - 16x + x^2$

$= x^2 - 16x + 64$

So... $(8-x)^2 = x^2 - 16x + 64$

Expand.

ex $(2x-1)(3x-2)$

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

$= 6x^2 - 7x + 2$

So... $(2x-1)(3x-2) = 6x^2 - 7x + 2$

p 166 # 4, 5, 9, 12a-f, 13

a, d only.