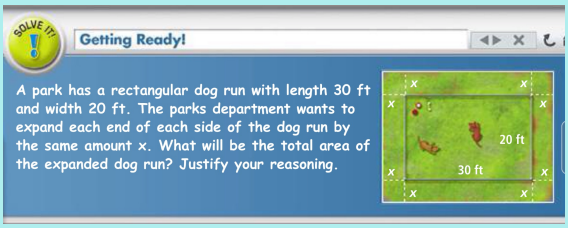
Section 8.3
Multiplying Binomial

Students will be able to multiply two binomials or a binomial by a trinomial.



There are several ways to find the product of 2 binomials, including models, algebra and tables.

Use the distributive property:

$(x - 6)(4x + 3)$

$(x-6)(4x) + (x-6)(3)$

$4x^2 - 24x + 3x - 18$

$4x^2 - 21x - 18$

Multiply:

$(-3x - 5)(x - 10)$

$(x-10)(-3x) + (x-10)(-5)$

$-3x^2 + 30x - 5x + 50$

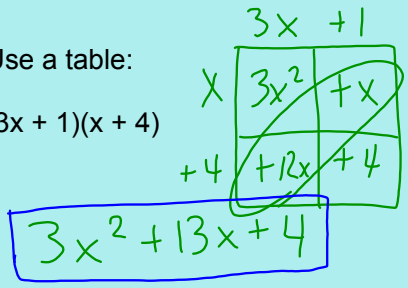
$-3x^2 + 25x + 50$

When you use the Distributive Property to multiply binomials, you multiply each term in the first binomial by each term in the second.

A table can also be used to help organize the problem.

Use a table:

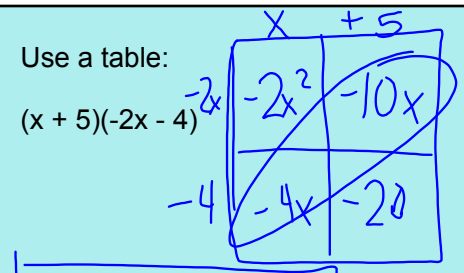
(3x + 1)(x + 4)



$3x^2 + 13x + 4$

Use a table:

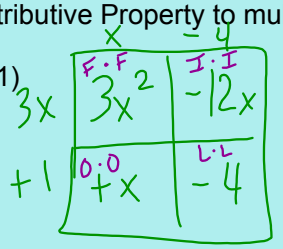
(x + 5)(-2x - 4)



$-2x^2 - 14x - 20$

Use the Distributive Property to multiply:

(x - 4)(3x + 1)



Now, label the boxes with which pieces are multiplied together.

This process for multiplying is called the FOIL Method.

F- First times First
O-Outside times Outside
I-Inside times Inside
L- Last times Last

(x - 2)(x + 3)

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

Use FOIL

(x - 3)(x + 4)

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

$x^2 + x - 12$

Use FOIL

(2x - 3)(x - 6)

$2x^2 - 12x - 3x + 18$

$2x^2 - 15x + 18$

Use any method to multiply:

(3 - 2x)(5 - x)

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

$2x^2 - 13x + 15$

What is the total surface area of a cylinder with radius x + 2 and height x + 4?

$2\pi r^2$ $2\pi rh$

Area of two circles. Area of curved surface.

$2\pi(x+2)^2 + 2\pi(x+2)(x+4)$

$2\pi(x+2)(x+2) + 2\pi(x+2)(x+4)$

$2\pi(x^2 + 2x + 2x + 4) + 2\pi(x^2 + 4x + 2x + 8)$

$2\pi x^2 + 8\pi x + 8\pi + 2\pi x^2 + 12\pi x + 16\pi$

$4\pi x^2 + 20\pi x + 24\pi$

Hwk: pg. 502
#10 - 26 (4th), 30 - 44 evens, 48

8-3cont.notebook