Squaring a Binomial

> - To **expand** a product of polynomials means to remove brackets by multiplying and then simplify by adding/subtracting "Like" terms.
>
> - We must use the Distributive Property to multiply polnomials.

What is the 3-Step rule???   Ex: $(2x - 7)^2$

> - is used when you want to square a binomial.
> - here is how it goes...
>   (1) Square the first
>   (2) Product of the first and last, then double
>   (3) Square the last

$$=$$

Another example???   Example - Squaring a Binomial.avi

Let's do some examples...

1) $(3x-5)^2$

$9x^2 - 30x + 25$

2) $2(x-3)^2 - 3(x-1)(x+3)$

$2(x^2 - 6x + 9) - 3(x^2 + 3x - x - 3)$

$2x^2 - 12x + 18 - 3x^2 - 9x + 3x + 9$

$2x^2 - 3x^2 - 12x - 9x + 3x + 18 + 9$

$-x^2 - 18x + 27$

Squaring a Binomial

$$(x+3)^2 = (x+3)(x+3)$$

$$= x^2 + 3x + 3x + 9$$

$$= \boxed{x^2 + 6x + 9}$$

$$(x+5)^2 = (x+5)(x+5) \qquad x^2 + 5x + 5x + 25$$
$$\boxed{x^2 + 10x + 25}$$

$$(x+7)^2 = (x+7)(x+7) \qquad x^2 + 7x + 7x + 49$$
$$\boxed{x^2 + 14x 49}$$

$$(x+10)^2 = x^2 + 20x + 100$$

$$(2x-3)^2 = 4x^2 - 12x + 9$$

$$(3x+1)^2 = 9x^2 + 6x + 1 \qquad (3x+1)(3x+1)$$

$$(5x+2)^2 = 25x^2 + 20x + 4$$

You try...

$$(x-6)^2 = x^2 \, 12x + 36$$

$$(6x-4)^2 = 36x^2 - 48x + 16$$

MORE EXAMPLES...

1) $5x(2x^2 - 5) = 10x^3 - 25x$

Expand →

← Factor

2) $(4x - 3y^3)(2x - y^2)$

3) $2(7w^2 - w) - 3w(w + 1) - (w^2 - 4w + 2)$

4) $(3w - 2)^2$

5) $5(4w + 3)^2$

Homework...**Multiplying Polynomials Worksheet**

Attachments

Example - Squaring a Binomial.avi

Multiplying Polynomials.pdf