

## Multiplying Polynomials Part 2

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

$$(2x+3)(2x+3)$$

$$\underline{4x^2+12x+9}$$

Perfect  
Squares

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

$$(2x-3)(2x-3)$$

$$\underline{4x^2-12x+9}$$

Conjugates

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

$$4x^2-9$$

If you see the pattern ...  $(5x-2)(5x+2) \rightarrow 25x^2-4$

Consider the question  $2 \cdot 3 \cdot 4$

$$\underline{6 \cdot 4}$$

$$24$$

So:

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

mult. first 2 binomials

$$(x^2+7x+10)(x-4)$$

triple distributive

$$x^3 - 4x^2 + 7x^2 - 28x + 10x - 40$$

collect like terms

$$x^3 + 3x^2 - 18x - 40$$

Finally:

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

$\rightarrow$  think:  $a \cdot b - 2c^2$

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

$a \cdot b - 2cc$

multiply  
& then

subtract

$$(x^2+5x-14) - 2(x^2+6x+9)$$

$$x^2+5x-14 - 2x^2-12x-18$$

$$-x^2-7x-32$$

BEDMAS