

# COMBINING POLYNOMIALS BY SUBTRACTING

**Warm Up:** Find the sum of the polynomials  $(x^2 + 3x + 5) + (x^2 + 4x + 1)$

Chris

$$x^4 + 7x^2 + 6$$

James

$$2x^2 + 7x + 6$$

Who added the polynomials correctly? James

Explain what the error was? Chris added exponents! (Not supposed to!)

Discuss your findings with your partner, do you agree? \_\_\_\_\_  
Explain why or why not

# SUBTRACTING POLYNOMIALS

## Example

$$(x + 5) - (4x - 3)$$

Distribute a -1 to each term (4x and -3)

Nothing before parenthesis → Drop them

$$x + 5 - 4x + 3$$

$$-3x + 8$$

1)  $(-8z + 4) - (8z + 7)$

$$\underline{-8z} + 4 \underline{-8z} - 7$$

$$\underline{-16z - 3}$$

2)  $(8x - 5) - (-2x + 9)$

$$\underline{8x} - 5 \underline{+2x} - 9$$

$$\underline{10x - 14}$$

3)  $(2w - 9) - (-4w - 5)$

$$\underline{2w} - 9 \underline{+4w} + 5$$

$$\underline{6w - 4}$$

4)  $(8m - 16) - 3(4m + 6)$

$$\underline{8m} - 16 \underline{-12m} - 18$$

$$\underline{-4m - 34}$$