

Subtraction of Polynomials

If the polynomials are functions we write: $(f - g)(x) = f(x) - g(x)$

To subtract polynomials

- 1) Distribute the minus sign, that is, change the sign of EVERY term of the second polynomial.
- 2) Use the commutative property to rearrange, get like terms together (the sign stays with the term that follows, if no sign + is understood).
- 3) Combine like terms.
- 4) You want your final answer to be in Standard Form, that is, the highest degree term first, with lowest degree term last. Keep in mind the constant term has degree 0.

Examples:

$4 - (-y - 4)$ Distribute the minus sign.

$4 + y + 4$ Commute

$y + 4 + 4$ Combine

$y + 8$

$$(5w^3 - 9w^2 + 6w + 13) - (7w^3 - 10w - 8)$$

1st distribute the minus sign to the second polynomial.

$$5w^3 - 9w^2 + 6w + 13 - 7w^3 + 10w + 8$$

Now combine like terms. Don't forget the signs!

$$-2w^3 - 9w^2 + 16w + 21$$

$(2x^2 + 3x - 1) - (4x^2 + 5x + 6)$ Distribute

$2x^2 + 3x - 1 - 4x^2 - 5x - 6$ Commute

$2x^2 - 4x^2 + 3x - 5x - 1 - 6$ Combine

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

We can also line these up like we did the addition, but it is very easy to forget to change ALL the signs so I don't recommend it.