

Section 5.1- cont. Operations with Polynomials

Adding ; Subtracting Polynomials

Combining 'Like' Terms

Like terms have same variables

$2x^3$ is like $-7x^3$

$3x^2$ not like $2x^3$

With exactly the same exponents

$-4a^2b^4c^7$; $9a^2b^4c^7$

$$\bullet \quad \underbrace{2x} - 3x^2 + \underbrace{4x} + 9 = -3x^2 + 6x + 9$$

$$\bullet \quad \underline{7x^4} + \underline{8x^3} - 4 + \underline{3x^2} - \underline{5x^4} + \underline{6x^3} - \underline{8x}$$

$$2x^4 + 14x^3 + 3x^2 - 8x \rightarrow 4$$

$$\begin{array}{r}
 (3x^4 - 7x^3) + (-5x^4 + 4x^3 - 2x^2) \\
 -5x^4 + 4x^3 - 2x^2 \\
 \hline
 -2x^4 - 3x^3 - 2x^2
 \end{array}$$

$$-2x^4 - 3x^3 - 2x^2$$

$$\begin{array}{r}
 (4x^3 - 7x^2 + 9x - 8) - 1(-3x^3 + 4x^2 - 6x + 10) \\
 + 3x^3 - 4x^2 + 6x - 10 \\
 \hline
 7x^3 - 11x^2 + 15x - 18
 \end{array}$$

$$2(4a^2 - 3a + 5) - \underline{3a}(6a - 1)$$

$$\underline{8a^2} - \underline{6a} + \underline{10} - \underline{18a^2} + \underline{3a}$$

$$-10a^2 - 3a + 10$$

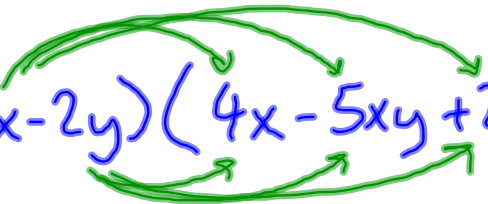
$$(8a^2 - 6a + 10) - (18a^2 - 3a)$$

Multiplying Polynomials

$$(3m - 2n)(4m + 5n)$$


$$12m^2 + 15mn - 8mn - 10n^2$$

$$12m^2 + 7mn - 10n^2$$

$$(3x-2y)(4x-5xy+2y)$$


$$12x^2 - 15x^2y + 6xy$$

$$-8xy + 10xy^2 - 4y^2$$

$$-15x^2y + 12x^2 + 10xy^2 - 2xy - 4y^2$$

$$(4a+3b)^2 = (4a+3b)(4a+3b)$$
$$16a^2 + 12ab + 12ab + 9b^2$$
$$16a^2 + 24ab + 9b^2$$

$$(5a+2p)(5a-2p)$$
$$25a^2 - \cancel{10ap} + \cancel{10ap} - 4p^2$$
$$25a^2 - 4p^2$$