Adding and Subtracting Polynomials

$$3x^6 - x^4 + 2$$

Polynomial - A sum or difference of monomials/terms.

Degree - The exponent in a polynomial with the greatest value. Degree = 6

Standard Form - The exponents are arranged in descending order.

1. Find the sum or difference using horizontal form.

a) $(5x^3 - 6x^2 + x - 1) + (6x^3 + 4x^2 - 7x + 10)$

$5x^3 - 6x^2 + x - 1 + 6x^3 + 4x^2 - 7x + 10$

$11x^3 - 2x^2 - 6x + 9$

b) $(-6x^2 + x - 8) + (-4x^2 + 18)$

$-6x^2 + x - 8 - 4x^2 + 18$

$-10x^2 + x + 10$

c) $(3x^2 - 5x + 7) - (2x^2 - 5x + 6)$

$3x^2 - 5x + 7 - 2x^2 + 5x - 6$

$x^2 + 1$

2. Find the sum or difference using vertical form.

a) $\left(-8x^4+x^2-2\right)+\left(5x^3+x^2-7x+8\right)$

$-8x^4 + x^2 - 2$

$+\ 5x^3 + x^2 - 7x + 8$

$-8x^4+5x^3+2x^2-7x+6$

$\boxed{-8x^4+5x^3+2x^2-7x+6}$

b) $\left(2x^2+4x\right)-\left(\frac{1}{2}x^2-2x\right)$

$+\ 2x^2 + 4x$

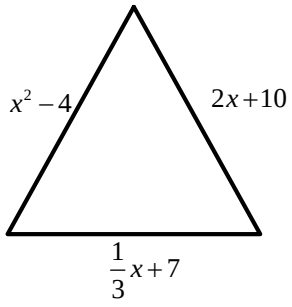
$-\frac{1}{2}x^2 \oplus 2x$

$\boxed{\frac{3}{2}x^2+6x}$

$2\cdot\frac{2}{2\cdot1}-\frac{1}{2}=\frac{4}{2}-\frac{1}{2}=\frac{3}{2}$

LCD = 2

3. Write an expression for the perimeter of the triangle.



$P = x^2-4+2x+10+\frac{1}{3}x+7$

$\boxed{P=x^2+\frac{7}{3}x+13}$

$3\cdot\frac{2}{3\cdot1}+\frac{1}{3}$

LCD = 3

$\frac{6}{3}+\frac{1}{3}=\frac{7}{3}$