Notes – Adding polynomials

$(x+7)$ → expression ⟶ Bi-nomial
(no equal sign) (2 terms)

$(3x^2 - 2x + 6)$ → expression → tri-nomial
(3 terms)

$6x^4 - 2x^3 + 17x^2 - 4x - 2$ → polynomial
(more than 3 terms)

Ex 1. Simplify:

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

Add like terms:

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

Ex 2. Simplify:

$(3x^2 - 2x + 6) + (-5x - 10)$

$$\begin{array}{r} 3x^2 - 2x + 6 \\ +\ \downarrow\ -5x - 10 \\ \hline 3x^2 - 7x - 4 \end{array}$$

Ex 3. Simplify:

$$\left(\frac{-5}{2}x^2 + 8x - 7\right) + \left(\frac{1}{2}x^2 + 2x - 2\right)$$

$$\frac{-5}{2}x^2 + 8x - 7$$
$$+ \frac{1}{2}x^2 + 2x - 2$$
$$-2x^2 + 10x - 9$$

Adding Fractions

$$\frac{-5}{2} + \frac{1}{2} = \frac{-4}{2} = -2$$

Ex 4. Simplify:

$$6\left(x^2 + 3x - \frac{1}{3}\right) + (-7x + 14)$$

$$6x^2 + 18x - 2$$
$$+ \downarrow \quad -7x + 14$$
$$6x^2 + 11x + 12$$

Multiply fractions

$$\frac{6}{1} \cdot \left(\frac{-1}{3}\right) = \frac{-6}{3} = -2$$

Ex 5. $-7(5x - 4) + 8(3x + 1)$

$$-35x + 28$$
$$+ \quad 24x + 8$$
$$-11x + 36$$