

Normal method
is to find and
use the
L.C.D.

Bow-tie is
another method
of creating a
common
denominator.

ADDING & SUBTRACTING FRACTIONS
IS A PRIMARY SCHOOL CONCEPT.

$$\frac{2}{3} - \frac{2}{5}$$

$$= \frac{5(2) - 3(2)}{(3)(5)} = \frac{10 - 6}{15} = \frac{4}{15}$$

Simplify each of the following

(i) $\frac{6y}{x(x+4y)} - \frac{3}{2x}$ (ii) $\frac{5}{3x-4} + \frac{2x+5}{3}$

(i) LCD = $2x(x+4y)$

$$= \frac{2(6y) - (x+4y)(3)}{2x(x+4y)}$$

$$= \frac{\cancel{12}y - 3x - \cancel{12}y}{2x(x+4y)}$$

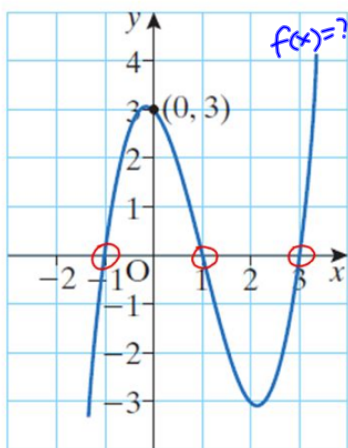
$$= \frac{-3x}{2x(x+4y)}$$

$$= \frac{-3}{2(x+4y)}$$

(ii) Bow tie

$$= \frac{3(5) + (2x+5)(3x-4)}{3(3x-4)}$$

$$= \frac{15 + 6x^2 - 8x + 15x - 20}{3(3x-4)} = \frac{6x^2 + 7x - 5}{3(3x-4)}$$



Function:

Roots: $x = -1$, $x = 1$, $x = 3$ factors $(x+1)$, $(x-1)$, $(x-3)$

$$f(x) = k(x+1)(x-1)(x-3)$$

$$f(0) = 3$$

$$\Rightarrow k(0+1)(0-1)(0-3) = 3$$

$$3k = 3 \Rightarrow k = 1$$

$$f(x) = 1 \underbrace{(x+1)(x-1)}_{\text{diff}}(x-3)$$

$$= (x^2 - 1^2)(x-3)$$

$$f(x) = x^3 - 3x^2 - x + 3$$