

Complex Fractions (Unit 4) Day 4)

→ A fraction with "baby" fractions in it

→ How to Simplify:

- ① Find the Least Common Multiple of all baby fraction denominators
- ② Multiply the LCM to each baby fraction
- ③ Simplify

Finding the Least Common Multiple:

Ⓧ 2, 4, 2 : $\boxed{4}$ Ⓧ $x, 4, x$: $\boxed{4x}$

Ⓧ 2, 3, 4 : $\boxed{12}$

Ⓧ $x, 9, 25$: $\boxed{225x}$

Ⓧ $u-2, u, u^2$: $\boxed{u^2(u-2)}$

Ⓧ $x^2, x-1, x^3$: $\boxed{x^3(x-1)}$

Ⓧ $x-1, x, x^2, x+5$: $\boxed{x^2(x+5)(x-1)}$

Ⓧ 3, 3, x^2 , 12, x^4 : $\boxed{12x^4}$

Complex Fractions

Ⓧ
$$\frac{(\cancel{4x})\frac{1}{x} + \frac{3}{4}(\cancel{4x})}{\frac{2}{x}(\cancel{4x})} = \frac{\boxed{4 + 3x}}{8} = \frac{4}{8} + \frac{3x}{8}$$

or
$$= \boxed{\frac{1}{2} + \frac{3x}{8}}$$

$$\textcircled{\text{ex}} \quad \frac{m^2}{9} (225m)$$

$$(225m) \frac{5}{m} + \frac{m^2}{28} (225m) = \frac{25m^3}{1125 + 9m^3}$$

$$\textcircled{\text{ex}} \quad \frac{(12m^2) \frac{1}{3} - \frac{2}{3} (12m^2)}{(12m^2) \frac{3}{m^2} - \frac{1}{12} (12m^2)}$$

$$= \frac{4m^2 - 8m^2}{36 - m^2} = \frac{-4m^2}{36 - m^2}$$

$$\textcircled{\text{ex}} \quad \frac{x-6}{x-2} \frac{(x^2)(x-2)}{(x^2)(x-2)}$$

$$(x^2)(x-2) \frac{x-6}{x^2} - \frac{x^2}{x-2} (x^2)(x-2)$$

$$= \frac{x^2(x-6)}{(x-2)(x-6) - (x^2)(x^2)}$$

$$= \frac{x^3 - 6x^2}{x^2 - 8x + 12 - x^4}$$

$$= \frac{x^3 - 6x^2}{-x^4 + x^2 - 8x + 12}$$