

• $\frac{2}{3} + \frac{7}{4} = \frac{29}{12}$
 I find it e

$$= \frac{4}{4} \left(\frac{2}{3} \right) + \frac{3}{3} \left(\frac{7}{4} \right)$$

$$\frac{2}{3} + \frac{7}{4} = \textcircled{1} \left(\frac{2}{3} \right) + \textcircled{1} \left(\frac{7}{4} \right)$$

$$= \frac{8}{12} + \frac{21}{12} \stackrel{(\textcircled{2})}{=} \frac{8+21}{12} = \frac{29}{12}$$

$f(x) = \frac{x+1}{x} + \frac{x^3-1}{x+1} = \left(\frac{x+1}{x+1} \right) \frac{x+1}{x} + \left(\frac{x}{x} \right) \frac{x^3-1}{x+1}$

You'll notice that 1

$$= \frac{(x+1)(x+1)}{(x+1)x} + \frac{x(x^3-1)}{x(x+1)}$$

$$= \frac{(x+1)(x+1) + x(x^3-1)}{x(x+1)}$$

Aside

$$\bullet (x+1)(x+1) = x^2 + 2x + 1$$

$$\bullet x(x^3 - 1) = x^4 - x$$

\Rightarrow

$$f(x) = \frac{(x+1)(x+1) + x(x^3 - 1)}{x(x+1)}$$

$$x(x+1)$$

$$= \frac{\overset{\checkmark}{x^2} + \overset{\checkmark}{2x} + \overset{\checkmark}{1} + \overset{\checkmark}{x^4} - \overset{\checkmark}{x}}{x(x+1)}$$

$$x(x+1)$$

$$= \frac{x^4 + x^2 + x + 1}{x(x+1)}$$

$$x(x+1)$$



$$xy = 6 \Rightarrow x = 6 \text{ or } y = 6$$


$$\left(\begin{array}{l} \text{Let} \\ x = 2, \\ y = 3 \end{array} \right)$$

$$\bullet (x+3)^2 \neq x^2 + 3^2$$

$$\text{Let } x=2, \text{ then } (2+3)^2 = 5^2 = 25$$

$$2^2 + 3^2 = 13 \neq 25$$

$$\bullet \frac{a/b}{c/d} = \left(\frac{a}{b}\right)\left(\frac{d}{c}\right)$$

$$\frac{3/2}{5/4} = \left(\frac{3}{2}\right)\left(\frac{4}{5}\right)$$


$$\bullet \sqrt{x^2 + a^2} \neq \sqrt{x^2} + \sqrt{a^2}$$

$$\sqrt{2^2 + 1} = \sqrt{2^2} + \sqrt{1^2}$$

$$= 2 + 1 = 3, \text{ but}$$

$$\sqrt{2^2 + 1} = \sqrt{4+1} = \sqrt{5} \neq 3.$$