분리형 분수방정식 예제 (Example of Separate Fractional Equations)





$$2 + \frac{x+2}{x-2} - \frac{2x^2}{x^2-4} - \frac{x-2}{x+2} = 0 \cdots (1)$$

$$2 + \frac{x+2}{x-2} - \frac{2x^2}{x^2 - 4} - \frac{x-2}{x+2} = 0 \cdots (1)$$
$$2 + \left(1 + \frac{4}{x-2}\right) - \left(2 + \frac{8}{x^2 - 4}\right) - \left(1 - \frac{4}{x+2}\right) = 0$$

$$2 + \frac{x+2}{x-2} - \frac{2x^2}{x^2 - 4} - \frac{x-2}{x+2} = 0 \cdots (1)$$

$$2 + \left(1 + \frac{4}{x-2}\right) - \left(2 + \frac{8}{x^2 - 4}\right) - \left(1 - \frac{4}{x+2}\right) = 0$$

$$\frac{4}{x-2} - \frac{8}{x^2 - 4} + \frac{4}{x+2} = 0$$

$$2 + \frac{x+2}{x-2} - \frac{2x^2}{x^2 - 4} - \frac{x-2}{x+2} = 0 \quad \cdots (1)$$

$$2 + \left(1 + \frac{4}{x-2}\right) - \left(2 + \frac{8}{x^2 - 4}\right) - \left(1 - \frac{4}{x+2}\right) = 0$$

$$\frac{4}{x-2} - \frac{8}{x^2 - 4} + \frac{4}{x+2} = 0$$

$$\frac{1}{x-2} - \frac{2}{x^2 - 4} + \frac{1}{x+2} = 0$$

$$2 + \frac{x+2}{x-2} - \frac{2x^2}{x^2 - 4} - \frac{x-2}{x+2} = 0 \cdots (1)$$

$$2 + \left(1 + \frac{4}{x-2}\right) - \left(2 + \frac{8}{x^2 - 4}\right) - \left(1 - \frac{4}{x+2}\right) = 0$$

$$\frac{4}{x-2} - \frac{8}{x^2 - 4} + \frac{4}{x+2} = 0$$

$$\frac{1}{x-2} - \frac{2}{x^2 - 4} + \frac{1}{x+2} = 0$$

$$x + 2 - 2 + x - 2 = 0$$

$$2 + \frac{x+2}{x-2} - \frac{2x^2}{x^2 - 4} - \frac{x-2}{x+2} = 0 \quad \cdots (1)$$

$$2 + \left(1 + \frac{4}{x-2}\right) - \left(2 + \frac{8}{x^2 - 4}\right) - \left(1 - \frac{4}{x+2}\right) = 0$$

$$\frac{4}{x-2} - \frac{8}{x^2 - 4} + \frac{4}{x+2} = 0$$

$$\frac{1}{x-2} - \frac{2}{x^2 - 4} + \frac{1}{x+2} = 0$$

$$x + 2 - 2 + x - 2 = 0 \quad x = 1$$

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$$2 + \frac{x+2}{x-2} - \frac{2x^2}{x^2 - 4} - \frac{x-2}{x+2} = 0 \quad \cdots (1)$$

$$2 + \left(1 + \frac{4}{x-2}\right) - \left(2 + \frac{8}{x^2 - 4}\right) - \left(1 - \frac{4}{x+2}\right) = 0$$

$$\frac{4}{x-2} - \frac{8}{x^2 - 4} + \frac{4}{x+2} = 0$$

$$\frac{1}{x-2} - \frac{2}{x^2 - 4} + \frac{1}{x+2} = 0$$

$$x = 1$$
일때 (1) 식의 분모를 0 으로 만들지 않으므로



x + 2 - 2 + x - 2 = 0 x = 1

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$$2 + \frac{x+2}{x-2} - \frac{2x^2}{x^2 - 4} - \frac{x-2}{x+2} = 0 \quad \cdots (1)$$

$$2 + \left(1 + \frac{4}{x-2}\right) - \left(2 + \frac{8}{x^2 - 4}\right) - \left(1 - \frac{4}{x+2}\right) = 0$$

$$\frac{4}{x-2} - \frac{8}{x^2 - 4} + \frac{4}{x+2} = 0$$

$$\frac{1}{x-2} - \frac{2}{x^2 - 4} + \frac{1}{x+2} = 0$$

$$x = 1$$
일때 (1) 식의 분모를 0 으로 만들지 않으므로

$$\therefore x = 1$$

x + 2 - 2 + x - 2 = 0 x = 1

Github:

https://min7014.github.io/math20210212001.html

Click or paste URL into the URL search bar, and you can see a picture moving.