4.1.6 - Adding & Subtracting Expressions II

4.1 - Algebra - Expressions

Leaving Certificate Mathematics

Higher Level & Ordinary Level

Example 1

Q. Express as a single fraction $\frac{2}{x-3} - \frac{1}{x+2}$

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$$\frac{2}{x-3} - \frac{1}{x+2} = \frac{2}{x-3} \times \frac{x+2}{x+2}$$

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Answer:

$$\frac{2}{x-3} - \frac{1}{x+2} = \frac{2}{x-3} \times \frac{x+2}{x+2} - \frac{1}{x+2} \times \frac{x-3}{x-3}$$

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Answer:

$$\begin{aligned}\frac{2}{x-3} - \frac{1}{x+2} &= \frac{2}{x-3} \times \frac{x+2}{x+2} - \frac{1}{x+2} \times \frac{x-3}{x-3} \\ &= \frac{2(x+2)}{(x-3)(x+2)} - \frac{x-3}{(x+2)(x-3)}\end{aligned}$$

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Answer:

$$\begin{aligned}
\frac{2}{x-3} - \frac{1}{x+2} &= \frac{2}{x-3} \times \frac{x+2}{x+2} - \frac{1}{x+2} \times \frac{x-3}{x-3} \\
&= \frac{2(x+2)}{(x-3)(x+2)} - \frac{x-3}{(x+2)(x-3)} \\
&= \frac{2x+4}{(x-3)(x+2)} - \frac{x-3}{(x-3)(x+2)}
\end{aligned}$$

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Answer:

$$\begin{aligned} \frac{2}{x-3} - \frac{1}{x+2} &= \frac{2x+4}{(x-3)(x+2)} - \frac{x-3}{(x-3)(x+2)} \\ &= \frac{2x+4-x+3}{(x-3)(x+2)} \end{aligned}$$

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\frac{2}{x-3} - \frac{1}{x+2} &= \frac{2x+4}{(x-3)(x+2)} - \frac{x-3}{(x-3)(x+2)} \\
&= \frac{2x+4-x+3}{(x-3)(x+2)} \\
&= \frac{x+7}{(x-3)(x+2)}
\end{aligned}$$