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So, we will multiply both sides by $(x-2)(x+3)$, which can be distributed to each term

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$$\frac{6}{x-2} + \frac{7}{x+3} = 4$$

$$\frac{6(x-2)(x+3)}{x-2} + \frac{7(x-2)(x+3)}{x+3} = 4(x-2)(x+3)$$

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$$6(x+3) + 7(x-2) =$$

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$$\frac{6}{x-2}+\frac{7}{x+3}=4$$

$$\frac{6\cancel{(x-2)}(x+3)}{\cancel{x-2}}+\frac{7(x-2)\cancel{(x+3)}}{\cancel{x+3}}=4(x-2)(x+3)$$

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$$6(x+3) + 7(x-2) = 4x^2 + 4x - 24$$

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Subtracting $13x + 4$ from both sides we get:

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▸ We can solve $4x^2-9x-28=0$ with the quad formula:

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Conclusion: The solutions to $\frac{6}{x-2}+\frac{7}{x+3}=2$ are: $x=4,\frac{-7}{4}$