

Answer on Question #60857 – Math – Algebra

Question

Which expression is equivalent to $\frac{2}{3(x+2)} - \frac{1}{3(x-2)}$?

Solution

$$\begin{aligned}\frac{2}{3(x+2)} - \frac{1}{3(x-2)} &= \frac{1}{3} \left(\frac{2}{x+2} - \frac{1}{x-2} \right) = \frac{1}{3} \cdot \frac{2 \cdot (x-2) - (x+2)}{(x+2)(x-2)} = \\ &= \frac{1}{3} \cdot \frac{2x - 4 - x - 2}{x^2 - 4} = \frac{1}{3} \cdot \frac{2x - x - 4 - 2}{x^2 - 4} = \frac{1}{3} \cdot \frac{x - 6}{x^2 - 4} = \frac{x - 6}{3x^2 - 12}\end{aligned}$$

Answer: $\frac{x-6}{3x^2-12}$