

Quiz Two

Math Question

$$\begin{aligned}\frac{5x-11}{2x^2+x-6} &= \frac{A}{x+2} + \frac{B}{2x-3} \\ \Rightarrow \frac{5x-11}{(x+2)(2x-3)} &= \frac{A(2x-3) + B(x+2)}{(x+2)(2x-3)} \\ \Rightarrow 5x-11 &= A(2x-3) + B(x+2) \\ \Rightarrow 5x-11 &= (2A+B)x + (-3A+2B) \\ &\quad \left[\text{comparing the co-efficient of } x \text{ and constant term in both the sides} \right] \\ 2A+B &= 5 \quad \text{--- (i)} & -3A+2B &= -11 \quad \text{--- (ii)} \\ \Rightarrow B &= 5-2A \quad \text{--- (iii)} \\ &\quad \text{Put the value of } B = 5-2A \text{ in (ii)} \\ -3A+2(5-2A) &= -11 \\ -3A+10-4A &= -11 \\ -7A &= -21 \\ A &= 3 \\ &\quad \text{Put the value of } A = 3 \text{ in (iii),} \\ B &= 5-2(3) \\ &= 5-6 \\ &= -1\end{aligned}$$

Therefore, $A = 3$, $B = -1$.

Which two of the following numbers have a product that is between -1 and 0 ?

Indicate both of the numbers.

-10

2^{-4}