

$$\frac{10}{x-5} + \frac{10}{x+5} = \frac{5}{6}$$

$$\frac{10x + 50 + 10x - 50}{x^2 - 25} = \frac{5}{6}$$

$$\begin{cases} x \neq \{-5, 5\} \\ 120x = 5x^2 - 75 \end{cases} \Rightarrow \begin{cases} x \neq \{-5, 5\} \\ x^2 - 24x - 25 = 0 \end{cases} \Rightarrow$$

$$\Rightarrow \begin{cases} x \neq \{-5, 5\} \\ x = \frac{24 \pm \sqrt{576 + 100}}{2} = \frac{24 \pm 26}{2} = 12 \pm 13 = \{-1, 25\} \end{cases} \Rightarrow$$

$$\Rightarrow x \in \{-1, 25\}.$$

Answer:  $x \in \{-1, 25\}$ .