

104. Resolução: ☒

$$\frac{x}{x+1} - \frac{x}{x-1} \geq 0 \rightarrow$$

$$\frac{x(x-1) - x(x+1)}{(x+1)(x-1)} \geq 0 \rightarrow$$

$$\frac{x^2 - x - x^2 - x}{x^2 - x + x - 1} \geq 0 \rightarrow$$

$$\frac{-2x}{x^2 - 1} \geq 0$$

$$f(x) = -2x \rightarrow -2x = 0 \rightarrow x = 0$$

$$g(x) = x^2 - 1 \rightarrow x^2 - 1 = 0$$

$$x^2 = 1 \rightarrow x = \pm \sqrt{1} \rightarrow x = 1 \text{ ou } x = -1$$

$$f(x) \begin{array}{c} + \\ - \\ 0 \end{array} \begin{array}{c} + \\ - \\ 0 \end{array} \begin{array}{c} + \\ - \\ 0 \end{array} \begin{array}{c} + \\ - \\ 0 \end{array} \rightarrow x$$

$$g(x) \begin{array}{c} + \\ 0 \\ - \\ 0 \\ + \end{array} \begin{array}{c} + \\ 0 \\ - \\ 0 \\ + \end{array} \begin{array}{c} + \\ 0 \\ - \\ 0 \\ + \end{array} \begin{array}{c} + \\ 0 \\ - \\ 0 \\ + \end{array} \rightarrow x$$

$$\frac{f(x)}{g(x)} \begin{array}{c} + \\ - \\ 0 \end{array} \begin{array}{c} + \\ - \\ 0 \end{array} \begin{array}{c} + \\ - \\ 0 \end{array} \begin{array}{c} + \\ - \\ 0 \end{array} \rightarrow x$$

$$S = \{x \in \mathbb{R} / x < -1 \text{ ou } 0 \leq x < 1\}$$

Alternativa (B)

105 - Resolução - ☒

DATA

ATAQ

0 conjunto solução

$$\frac{6x}{x+3} < 5$$

$$\rightarrow \frac{6x}{x+3} - \frac{5}{1} < 0 \rightarrow \frac{6x - 5(x+3)}{x+3}$$

$$\rightarrow \frac{6x - 5x - 15}{x+3} \rightarrow \frac{x - 15}{x+3} < 0$$

$$f(x) = x - 15 \rightarrow x = 15 \text{ RAIZ}$$

$$g(x) = x + 3 \rightarrow x = -3 \text{ RAIZ}$$

$$f(x) \begin{array}{c} + \\ - \end{array} \begin{array}{c} + \\ - \end{array} \begin{array}{c} + \\ - \end{array} \begin{array}{c} + \\ - \end{array} \rightarrow x$$

$$f(x) \begin{array}{c} + \\ - \end{array} \begin{array}{c} + \\ - \end{array} \begin{array}{c} + \\ - \end{array} \begin{array}{c} + \\ - \end{array} \rightarrow x$$

$$g(x) \begin{array}{c} + \\ 0 \\ - \\ 0 \\ + \end{array} \begin{array}{c} + \\ 0 \\ - \\ 0 \\ + \end{array} \begin{array}{c} + \\ 0 \\ - \\ 0 \\ + \end{array} \begin{array}{c} + \\ 0 \\ - \\ 0 \\ + \end{array} \rightarrow x$$

$$\frac{f(x)}{g(x)} \begin{array}{c} + \\ - \end{array} \begin{array}{c} + \\ - \end{array} \begin{array}{c} + \\ - \end{array} \begin{array}{c} + \\ - \end{array} \rightarrow x$$

$$S = \{x \in \mathbb{R} / -3 < x < 15\}$$

Alternativa (D)

106 - Resolução: ☒

$$\frac{x+1}{x-2} \geq 4 \rightarrow \frac{x+1}{x-2} - \frac{4}{1} \geq 0$$

$$\rightarrow \frac{x+1 - 4(x-2)}{x-2} \rightarrow$$