

$$\frac{1}{x-1} = |x-1| \Rightarrow \begin{cases} (x-1)^2 = -1 \text{ غلط} \\ (x-1)^2 = 1 \rightarrow x^2 - 2x = 0 \rightarrow x = 2, 0 \Rightarrow x = 0 \rightarrow \frac{1}{-1} = -1 \end{cases}$$

پس مقدار فقط ۱ دارد

$$-2 < \frac{x-1}{x} < 2 \rightarrow \begin{cases} \frac{x-1}{x} < 2 \rightarrow -\frac{1}{x} < 0 \rightarrow x > 0 \\ \frac{x-1}{x} > -2 \rightarrow \frac{x-1}{x} > 0 \rightarrow \frac{-\infty}{+} \frac{0}{-} \frac{1}{+} \frac{+\infty}{+} \end{cases}$$

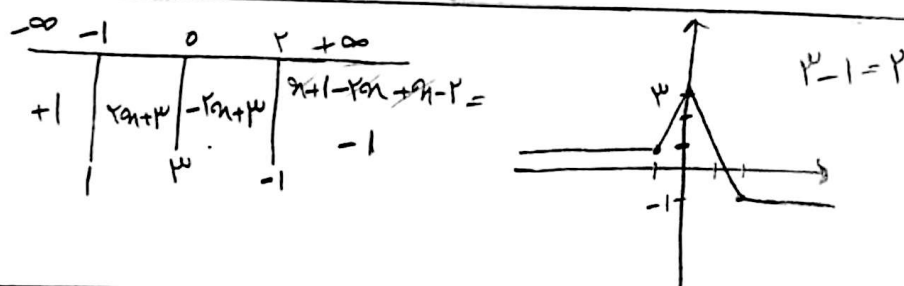
(1/2, +∞)

$$\begin{aligned} \rightarrow \left(\frac{x-2}{x+1} > 1 \Rightarrow \frac{x-2-x-1}{x+1} > 0 \rightarrow \frac{-x-3}{x+1} > 0 \rightarrow \frac{-\infty}{-} \frac{-3}{+} \frac{-1}{-} \frac{+\infty}{+} \right. \\ \left. \frac{x-2}{x+1} < -1 \Rightarrow \frac{x-2+x+1}{x+1} < 0 \rightarrow \frac{2x-1}{x+1} < 0 \rightarrow \frac{-\infty}{+} \frac{-1}{-} \frac{1}{+} \frac{+\infty}{+} \right) \end{aligned}$$

(-3, 1/2) ∪ (1/2, +∞)

امتحان عدد ۲۱ (۲۵٪) → x = 2, 1/2, -2, -1/2, 3, -3 ⇒ x ∈ (-2, 3) → به از هر دو طرف فاصله یکسانی داشته باشد

$$|x-a| < \frac{a}{b} \Rightarrow \frac{-a}{b} < x < \frac{a}{b} + a \rightarrow \begin{cases} x = -\frac{a}{b} + a = \frac{1}{2} \\ x = \frac{1}{b} - a = \frac{1}{2} \rightarrow a = \frac{1}{2} \end{cases}$$



$$y \leq \left| \frac{1}{2}x \right| - 2 \Rightarrow y = \left| \frac{1}{2}x + 4 \right| - 1 \Rightarrow$$

$$\left| \frac{1}{2}x \right| - 2 \leq \left| \frac{1}{2}x + 4 \right| - 1 \rightarrow \left| \frac{1}{2}x \right| - 1 = \left| \frac{1}{2}x + 4 \right| \Rightarrow$$

$$\begin{cases} -\frac{1}{2}x - 1 = \frac{1}{2}x + 4 \rightarrow x = -5 \\ \frac{1}{2}x - 1 = \frac{1}{2}x + 4 \rightarrow \text{غلط} \end{cases}$$

