

معین نصیری ۱۹۷۵ آفرین! یازدهم سپر B

ترالوف شماره ۲۵

$$\frac{1}{x-1} = |x-1| \begin{cases} x \geq 1 \rightarrow \frac{1}{x-1} = x-1 \Rightarrow x^2 - 2x + 1 = 1 \Rightarrow x^2 - 2x = 0 \Rightarrow x(x-2) = 0 \quad x=0, 2 \quad \text{①} \\ x < 1 \rightarrow \frac{1}{x-1} = -x+1 \Rightarrow -x^2 + 2x - 1 = 1 \Rightarrow x^2 - 2x + 2 = 0 \quad \Delta < 0 \end{cases}$$

ریشه حقیقی ندارد ②

$\Rightarrow$ معادله ذکر شده تنها دارای ۱ ریشه حقیقی است $\boxed{2}$ ✓

الف) $\left| \frac{2x-1}{x} \right| < 2 \rightarrow -2 < \frac{2x-1}{x} < 2$ $\frac{-1}{x} < 0$ $\frac{0}{+} \frac{0}{-} \frac{-}{+}$ $\boxed{x > 0} \quad I$

$\Rightarrow I \cap II = \boxed{x > \frac{1}{2}} \quad \checkmark$ $0 < \frac{2x-1}{x}$ $\frac{0}{+} \frac{0}{-} \frac{+}{+}$ $\boxed{x < 0 \cup x > \frac{1}{2}} \quad II$

ب) $\left| \frac{x-2}{2x+1} \right| > 1 \rightarrow \frac{x-2}{2x+1} > 1 \rightarrow \frac{-x-3}{2x+1} > 0$ $\frac{-3}{-} \frac{-1}{+} \frac{-}{+}$ $\boxed{-3 < x < -\frac{1}{2}} \quad I$

$I \cup II = \boxed{x \in (-3, \frac{1}{2}) - \{\frac{1}{2}\}} \quad \checkmark$ $\frac{x-2}{2x+1} < -1 \rightarrow \frac{3x-1}{2x+1} < 0$ $\frac{-1}{-} \frac{1}{+} \frac{+}{+}$ $\boxed{-\frac{1}{2} < x < \frac{1}{3}} \quad II$

$x^2 < |x+6| \rightarrow \begin{cases} x > 6 \rightarrow x^2 - x - 6 < 0 \\ x < 6 \rightarrow x^2 + x + 6 < 0 \end{cases}$ $\frac{-2}{+} \frac{3}{-} \frac{+}{+}$ $\boxed{-3 < x < 3} \quad I$

$|x-a| < b$ $a = ?$ $\Delta < 0 \rightarrow$ $a > 0 \rightarrow$ $\rightarrow \emptyset \quad II$ ③

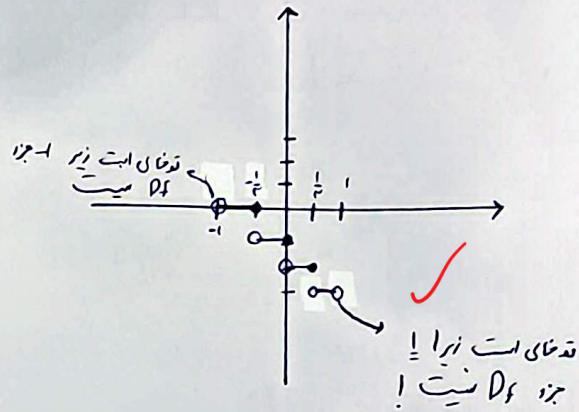
$I \cup II = -3 < x < 3$ $\frac{3-2}{2} = \frac{1}{2}$ $|x - \frac{1}{2}| < \frac{5}{2}$ $\frac{0}{\downarrow} \frac{5}{\downarrow}$ $\frac{-1}{\downarrow} \frac{6}{\downarrow}$ $\boxed{a = \frac{1}{2}} \quad \checkmark$ $\boxed{b = \frac{5}{2}}$

الف) $y = [-2u] - 1$

$u \in (-1, 1)$

$(-1, 0] \cup [0, 1)$

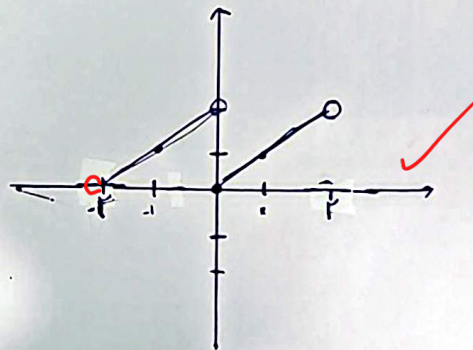
$-1 < -2u \leq 0 \Rightarrow 0 \leq 2u < 1$
 $\boxed{-\frac{1}{2} < u \leq 0} \quad \boxed{0 > u > -\frac{1}{2}}$



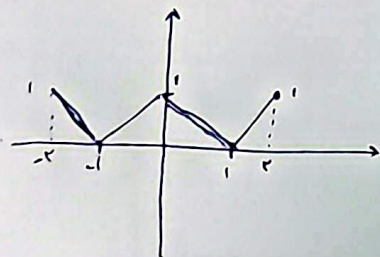
۷

۲

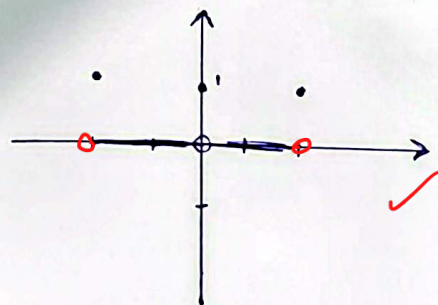
ب) $y = u - 2\left[\frac{u}{2}\right] \quad u \in (-2, 2)$



الف) $y = [|u| - 1]$ $u \in [-2, 2]$



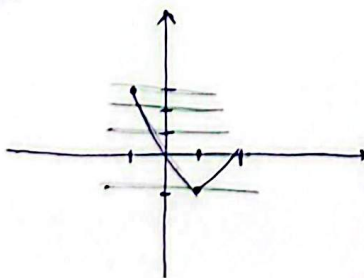
[]



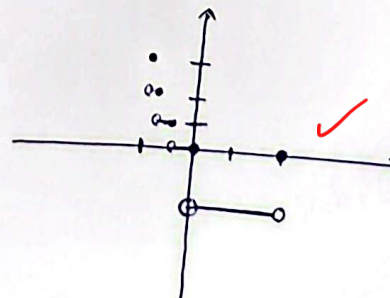
۸

۱, ۷, ۵

ب) $y = [u^2 - 2u]$ $u \in [-1, 2]$



[]



یازدهم سیر B

معین نصیری

تالین کماره ۲۰

$$a + [b] = \epsilon/2 \longrightarrow a + kb = \epsilon/2 + Pb \longrightarrow a + b = \epsilon/2$$

$$b - [a] = 2/2 \longrightarrow b - ka = 2/2 - Pa \longrightarrow b - a = 2/2$$

$$Pb = 0/2$$

$$Pa = 0/2$$

$$2b = 4/2$$

$$\begin{cases} b = 2/2 \\ a = 1/2 \end{cases}$$

$$\{ = a + b = 3/2 \}$$

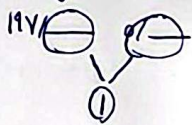
(۲) ⑨

$$(1 + \sqrt{2})' + (1 - \sqrt{2})' = 19/1$$

$$-0/2$$

$$0 < u < 1$$

$$\Rightarrow y + u = 19/1$$



$$\Rightarrow (1 + \sqrt{2})' = 19/1$$

$$\boxed{19/1}$$

(۲)

⑥