

نام و نام خانوادگی: فرهاد فرهادی پاسخنامه تشریحی تکلیف شماره ۲۰ کلاس (زدهم) B

$$\frac{1}{x-1} \geq |x-1| \Rightarrow \frac{1}{x-1} \geq x-1 \rightarrow x^2 - 2x \geq 0 \begin{cases} x \geq 2 \\ x \leq 0 \end{cases}$$

$$\frac{1}{x-1} \leq -|x-1| \Rightarrow \frac{1}{x-1} \leq -x+1 \rightarrow x^2 - 2x + 1 \leq 0 \rightarrow \Delta = 0$$

برای $x \geq 1$ $\checkmark$

برای $x < 1$ $\checkmark$

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$$| \frac{x-1}{2} | < 2 \rightarrow |x-1| < 4 \Rightarrow x^2 - 4x + 4 < 4 \Rightarrow \frac{1}{x} < 2 \checkmark$$

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$$| \frac{x-2}{x+1} | > 1 \rightarrow |x-2| > |x+1| \Rightarrow x^2 - 4x + 4 > x^2 + 2x + 1$$

$$\Rightarrow 3x^2 + 18x - 3 < 0 \rightarrow -2 < x < \frac{1}{3} \quad \text{①} \cap \text{②} \Rightarrow -2 < x < \frac{1}{3} - \frac{1}{3}$$

ریشه مربع

$$x^2 < |x+9| \Rightarrow x^2 - x - 9 < 0 \Rightarrow (x-5)(x+2) < 0$$

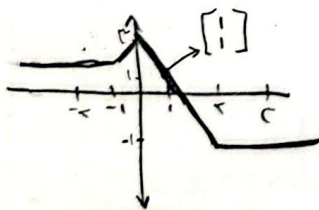
$$\begin{matrix} -2 & 5 \\ + & - \\ - & + \end{matrix} \Rightarrow -2 < x < 5 \quad \text{①} \Rightarrow x > -6$$

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$$\Rightarrow x < -6 \Rightarrow x^2 + x + 9 < 0 \Rightarrow \Delta < 0 \Rightarrow \text{فاصله از صفر} \Rightarrow |x - \frac{-1-5}{2}| < \frac{5-1}{2} \Rightarrow |x - \frac{1}{2}| < \frac{3}{2} \Rightarrow x \in (-1, 2) \checkmark$$

$$y = |x+1| - |2x| + |x-2|$$



$$\left. \begin{matrix} y_{\max} = 1 \\ y_{\min} = -1 \end{matrix} \right\} \Rightarrow y_{\max} + y_{\min} = 2 \checkmark$$

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$$y = | \frac{1}{x} x | - 2$$

$$y' = | \frac{1}{x} (x+4) | - 2 + 1 = | \frac{1}{x} (x+4) | - 1$$

$$\Rightarrow y = y' \Rightarrow | \frac{1}{x} x | - 2 = | \frac{1}{x} (x+4) | - 1 \Rightarrow |x| = |x+4| + 2$$

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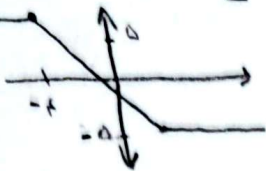
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$$x = x+4 \Rightarrow 0 = 4 \times \quad x > 0$$

$$-x = x+4 \Rightarrow x = -2 \quad -2 < x < 0 \Rightarrow x = -2 \checkmark$$

$$-x = -x-2 \Rightarrow 0 = -2 \times \quad x < 0$$

الف) $f(x) = [1-x] - [x+1] \xrightarrow{R_1} [-1 \leq x \leq 1] \xrightarrow{R_2} \{-1, 0, 1\}$

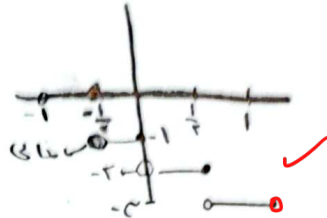


(1, 5)

ب) $f(x) = \frac{1}{2} \left[\frac{x+1}{2} \right] - 1 + \frac{1}{2} - \left[\frac{1}{2} \right] \xrightarrow{R_1} [-1, 0]$

الف) $y = [-2x] - 1 \quad x \in (-1, 1)$

$-1 < x \leq -\frac{1}{2} \rightarrow [-2x] = 1, 2$
 $-\frac{1}{2} < x \leq 0 \rightarrow [-2x] = 1, 2, 3$
 $0 < x \leq \frac{1}{2} \rightarrow [-2x] = 1, 2, 3, 4$
 $\frac{1}{2} < x < 1 \rightarrow [-2x] = 1, 2, 3, 4, 5$



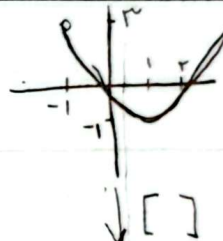
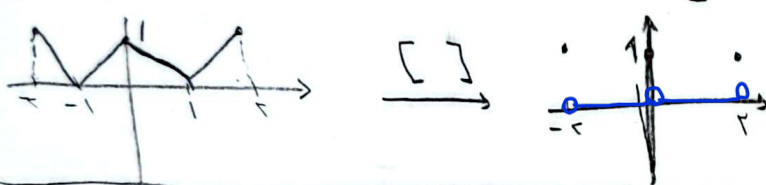
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Y

ب) $y = x - 2 \left[\frac{x}{2} \right] \rightarrow \begin{matrix} -2 < x < 0 \rightarrow x+2 \\ 0 < x < 2 \rightarrow x \end{matrix}$



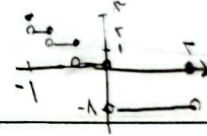
الف) $y = [|x| - 1] \quad x \in [-2, 2]$



(1, 5)

A

ب) $y = [x - 2x] \quad x \in [-1, 2]$



$a + [b] = f, r \rightarrow a = x/r$

$b - [a] = r, f \rightarrow b = y/f$

$a + b = 0/f, r \rightarrow a + b = f, r$
 $b - (a - 0/f) = r, f \rightarrow b - a = r, f$
 $\rightarrow r b = y, 1 \Rightarrow b = r, f \rightarrow y = r$
 $a = 1, r \rightarrow a = 1$

$a + b = f, r$

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$(1 + \sqrt{2})^9 + (1 - \sqrt{2})^9 = 19A \rightarrow (1 + \sqrt{2})^9 = 19V / \dots$

$\sqrt{2} \approx 1,4$

$[(1 + \sqrt{2})^9] = ?$

$[(1 + \sqrt{2})^9] = 19V$

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