نام و نام خانوادگی ...فرزان شیرازی... پاسخنامه تشریحی تکلیف شماره ...۲۵... کلاس یازدهم A

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$\frac{1}{x-1}=|x-1| \to (x-1)|x-1|=1$

$x\geq 1 \to x^2-2x+1=1 \to x^2-2x=0 \to x=0$ یا $2 \to \cancel{x=0}$

$\to x=2$ یک ریشه دارد

$x\leq 1 \to -x^2+2x-1 \to x^2-2x+2=0 \to \Delta<0$

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الف) $\left|\frac{2x-1}{x}\right|<2 \to -2<\frac{2x-1}{x}<2$

$\to \frac{4x-1}{x}>0 \to$ (1) $\quad 0 \quad \frac{1}{4}$

$\to -\frac{1}{x}<0 \to x>0$ (2)

$\xrightarrow{(1)\cap(2)} [\frac{1}{4}, +\infty)$

جواب ب $\to [-3 \quad \frac{1}{3}]-\{2\}$

ب) $\left|\frac{x-2}{2x+1}\right|>1$

$\to \frac{x-2}{2x+1}>1 \to 0<\frac{x-2-2x-1}{2x+1} \to 0<\frac{-x-3}{2x+1} \to -3 \quad -\frac{1}{2}$

$\to \frac{x-2}{2x+1}<-1 \to \frac{x-2+2x+1}{2x+1}<0 \to \frac{3x-1}{2x+1}<0 \to -\frac{1}{2} \quad \frac{1}{3}$

$[-3, -\frac{1}{2}) \cup (-\frac{1}{2}, \frac{1}{3}]$

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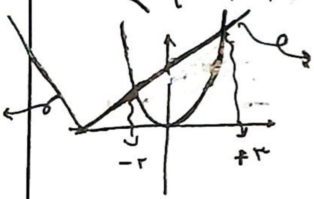
$x^2<|x+4|$



$x^2=x+4 \to x^2-x-4=0=(x-3)(x+2) \to x=-2, 3$

$\to -2<x<3 \to -2.5<x-0.5<2.5$

$\to |x-0.5|<2.5 \to \alpha=0.5$

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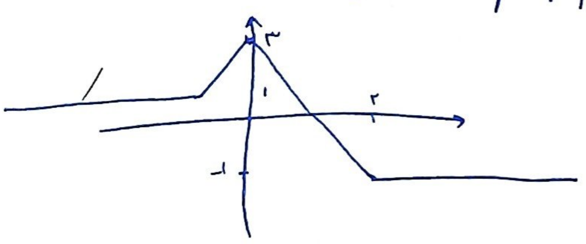
$|x+1|-|2x|+|x-2|=y$

x		-1		0		2	
y	1		$2x+3$		$-2x+3$		-1



$\left.\begin{matrix} max \to 3 \\ min \to -1 \end{matrix}\right\} \to (2)$

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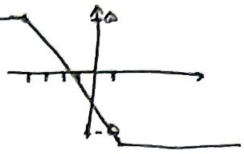
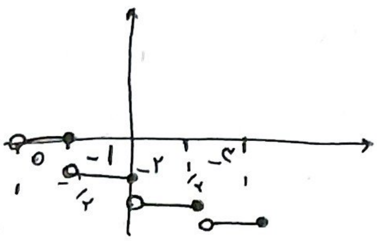
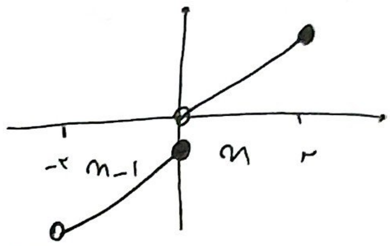
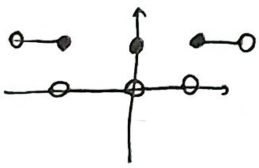
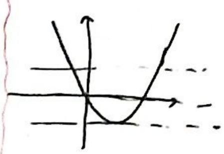
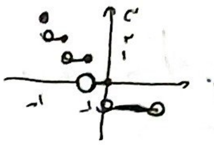
$y=\left|\frac{1}{2}|x|\right|-2 \xrightarrow[\text{چپ}]{\text{4 واحد}} y=\left|\frac{1}{2}(x+4)\right|-2 \xrightarrow{\text{1 واحد بالا}} y=\left|\frac{1}{2}x+2\right|-1$

$y=\left|\frac{1}{2}x\right|-2$ و $y=\left|\frac{1}{2}x+2\right|-1 \to \left|\frac{1}{2}x\right|-2=\left|\frac{1}{2}x+2\right|-1$

$\to \frac{1}{2}x<0, \ \frac{1}{2}x+2>0 \to -4<x<0 \to -\frac{1}{2}x-2=\frac{1}{2}x+2-1 \to \boxed{x=-3}$

الف) $f = [\,|1-x| - |x+4|\,]$ $|x-1| - |x+4| \longrightarrow$  $\rightarrow [\bigcirc] \Rightarrow \{5, 4, 3, 2, 1, 0, -1, -2, -3, -4, -5\}$	ب) $f(x) = \frac{1}{x} - [\frac{x+1}{x}]$ $f(x) = \frac{1}{x} - [\frac{x}{x} + \frac{1}{x}] = \frac{1}{x} - [\frac{1}{x}] - 1$ $\bigcirc - [\bigcirc] \longrightarrow \frac{1}{x} - [\frac{1}{x}] \rightarrow [0 \;\; 1)$ $[0 \;\; 1) - 1 \longrightarrow R_f : [-1 \;\; 0)$	۶
الف) $y = [-2x] - 1$ 	ب) $f(x) = x - 2[\frac{x}{2}] \quad x \in (-2, 2)$ 	۷
الف) $[\,||x|-1|\,] \quad x \in [-2, 2]$  $\rightarrow$ 	ب) $y = [x^2 - 2x]$  	۸
$b - [a] = 2/4 \qquad a + [b] = 4/2$ $b = \bigcirc/4 \qquad [a] + [b] = 4 \longrightarrow [b] = 3$ $a = \bigcirc/2 \qquad [b] - [a] = 2 \qquad , [a] = 1$ $b = 3/4 \quad , a = 1/2$		۹
$(1+\sqrt{2})^6 + (1-\sqrt{2})^6 = 198 \longrightarrow (1+\sqrt{2})^6 = 198 - (1-\sqrt{2})^6$ $-1 < 1-\sqrt{2} < 0 \longrightarrow 0 < (1-\sqrt{2})^6 < 1 \longrightarrow -1 > -(1-\sqrt{2})^6 > 0 \longrightarrow 197 < 198 - (1-\sqrt{2})^6 < 198$ $\rightarrow 197 < (1+\sqrt{2})^6 < 198 \longrightarrow [(1+\sqrt{2})^6] = 197$		۱۰