نام و نام خانوادگی ...فرهام فرزانه... پاسخنامه تشریحی تکلیف شماره ...20... کلاس ...یازدهم تجربی B...

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$\frac{1}{x-1} = |x-1| \Rightarrow \frac{1}{x-1} = x-1 \to x^2-2x=0$ < $x=2$ ✓ ، $x=0$ ✗

$\xrightarrow{x\geq 1}$ ۱ ریشه

$\xrightarrow{x<1} \frac{1}{x-1} = -(x-1) = -1 = x^2-2x+1 \to x^2-2x+2=0 \to \Delta=-4$

← ریشه ندارد

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الف) $\left|\frac{2x-1}{x}\right| < 2 \to |2x-1| < |2x| \Rightarrow 4x^2-4x+1 < 4x^2$

$\Rightarrow \frac{1}{4} < x$

ب) $\left|\frac{x-2}{2x+1}\right| > 1 \to |x-2| > |2x+1| \Rightarrow x^2-4x+4 > 4x^2+4x+1$

$\Rightarrow 3x^2+8x-3<0 \to -3<x<\frac{1}{3} \xRightarrow{①\cap②} -3<x<\frac{1}{3}$

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$x\geq -6: x^2 < |x+6| \Rightarrow x^2-x-6<0 \Rightarrow (x-3)(x+2)<0$

$-2 \quad 3$: $+ \,|\, - \,|\, +$ $\Rightarrow -2<x<3$ ① $\Rightarrow x\geq -6$

$\Rightarrow x<-6 \Rightarrow x^2+x+6<0 \Rightarrow a>0 , \Delta<0$ (همواره مثبت) $\xrightarrow{1\cap 2} \left|x-\frac{3-2}{2}\right| < \frac{3+2}{2}$

$\Rightarrow \left|x-\frac{1}{2}\right| < \frac{5}{2} = \boxed{x = \frac{1}{2}}$

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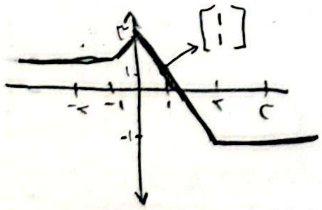
$y = |x+1| - |2x| + |x-2|$

-1 ، 0 ، 2



$\left.\begin{array}{l} y_{max} = 3 \\ y_{min} = -1 \end{array}\right\} \Rightarrow y_{max} + y_{min} = \boxed{2}$

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

انتقال

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

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

$x = x+6 \to 0=6$ ✗ $\quad x\geq 0$

$-x = x+6 \Rightarrow x=-3 \quad -4<x<0 \Rightarrow \boxed{x=-3}$

$-x = -x-2 \Rightarrow -2=0$ ✗ $\quad x\leq -4$

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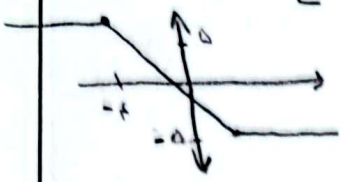
الف) $f(x) = [|1-x| - |x+1|] \xrightarrow{R_f} [-5 \le y \le 5] \xrightarrow{R_2} \{-5, -4, \dots, 4, 5\}$



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

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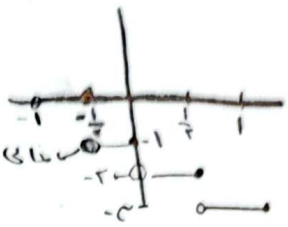
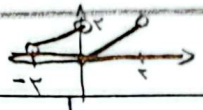
الف) $y = [-2x] - 1 \quad x \in (-1, 1)$

$-1 < x \le -\frac{1}{2}$	$[-2x] - 1 = 0$
$-\frac{1}{2} < x \le 0$	$[-2x] - 1 = 1$
$0 < x \le \frac{1}{2}$	$[-2x] - 1 = 2$
$\frac{1}{2} < x < 1$	$[-2x] - 1 = 3$



ب) $y = x - 2\left[\frac{x}{2}\right] \longrightarrow \begin{cases} -2 < x < 0 \to x+2 \\ 0 \le x < 2 \to x \end{cases}$



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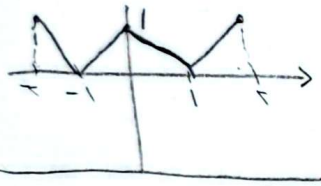
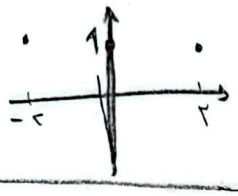
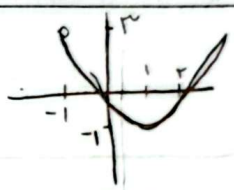
الف) $y = [|x|-1] \quad x \in [-2, 2]$

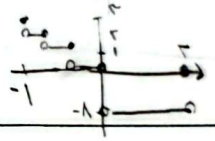


$[\,]$





$[\,]$



ب) $y = [x^2 - 2x] \quad x \in [-1, 2]$

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$a + [b] = 4,2 \longrightarrow a = 2/2$

$b - [a] = 2,4 \longrightarrow b = 4/4$

$a + b - 0/4 = 4,2 \quad \left.\begin{matrix} a+b = 4,8 \\ b-a = 2,2 \end{matrix}\right\} \longrightarrow 2b = 7,0 \Rightarrow b = 3,4 \to y = 2$

$b - (a - 0/2) = 2,4 \qquad a = 1,2 \to x = 1$

$\boxed{a + b = 4,6}$

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$(1+\sqrt{2})^6 + (1-\sqrt{2})^6 = 198 \longrightarrow (1+\sqrt{2})^6 = 197/---$

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

$[(1+\sqrt{2})^6] = ? \qquad [(1+\sqrt{2})^6] = 197$