

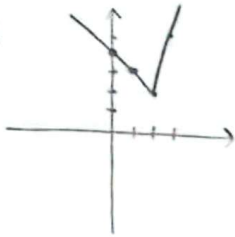
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نام و نام خانوادگی پاسنامه تشریحی تکلیف شماره ۷... کلاس ...

الف) $y = x + |2x - 4|$

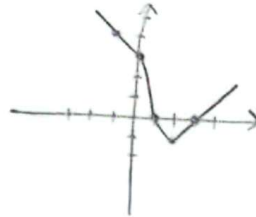
$x \geq 2: 3x - 4$
 $x < 2: -x + 4$

$R_f = [2, +\infty)$



ب) $y = |x - 2| + |x - 1| - |x|$

$x = 3 \rightarrow 0$
 $x = 2 \rightarrow -1$
 $x = 1 \rightarrow 0$
 $x = 0 \rightarrow 2$
 $x = -1 \rightarrow 4$



$R_f = (-1, +\infty)$

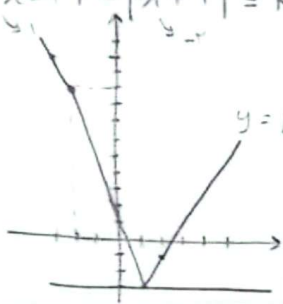
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$|3x - 3| - |x + 2| = k$

$y \rightarrow -1$
 $-2 \rightarrow 9$
 $-3 \rightarrow 11$

$y = |3x - 3| - |x + 2|$

$k = -3$

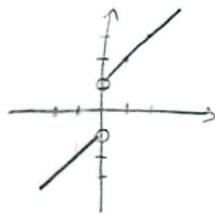


(فقط در این صورت رسم دارد)

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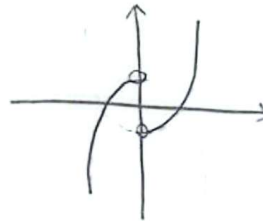
الف) $y = x + \frac{x}{|x|} \rightarrow x \neq 0$

$x > 0: x + 1$
 $x < 0: x - 1$



ب) $y = x|x| - \frac{x}{|x|} \rightarrow x \neq 0$

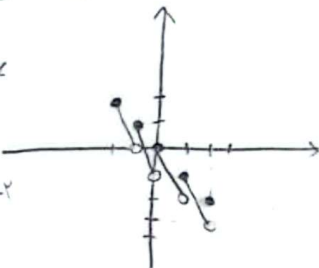
$x > 0: x^2 - 1$
 $x < 0: -x^2 + 1$



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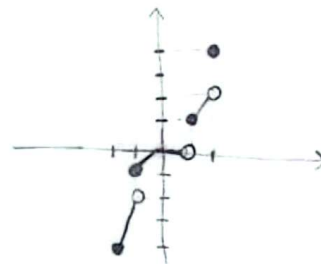
الف) $y = [x] - 2x$

$[-2, -1): -2 - 2x$
 $[-1, 0): -1 - 2x$
 $[0, 1): -2x$
 $[1, 2): 1 - 2x$
 $\{2\} 2 - 2x = -2$



ب) $y = [x]|x|$

$[-2, -1): 2x$
 $[-1, 0): x$
 $[0, 1): 0$
 $[1, 2): x$
 $\{2\} 2$



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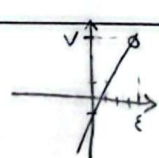
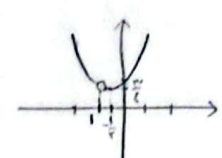
الف) $y = 3x - [3x] \rightarrow R_f = [0, 1)$

ب) $y = 4x - 4[x] = 4(x - [x]) \rightarrow R_f = [0, 4)$

ج) $y = x - 5[\frac{x}{5}] = 5 \times \frac{x}{5} - 5[\frac{x}{5}] = 5(\frac{x}{5} - [\frac{x}{5}]) \rightarrow R_f = [0, 5)$

د) $y = [2x] - 2x \rightarrow R_f = (-1, 0]$

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ا) $-\sqrt{9+\varepsilon} \leq 3\sin x + \varepsilon \cos x \leq \sqrt{9+\varepsilon} \Rightarrow R_f = [-\sqrt{13}, \sqrt{13}]$ ب) $-\sqrt{14+9} \leq \varepsilon \sin x - 3\cos x \leq \sqrt{14+9} \Rightarrow R_f = [-\omega, \omega]$ ج) $y = [r \sin x + \omega \cos x] \rightarrow -\sqrt{r^2} \leq r \sin x + \omega \cos x \leq \sqrt{r^2} \xrightarrow{[]} -4, -\omega, -\varepsilon, -3, -r$ $\dots, r, \varepsilon, \omega$ $R_f = \{-4, -\omega, -\varepsilon, -3, -r, -1, 0, 1, r, 3, \varepsilon, \omega\}$ د) $y = \sqrt{\cos x - r \sin x} \rightarrow -\sqrt{1+\varepsilon} \leq \cos x - r \sin x \leq \sqrt{\omega} \xrightarrow{\sqrt{\cdot}} R_f = [0, \sqrt{\omega}]$ ≥ 0	5	6
ا) $y = \sin^2 x + 3 \sin x + r$ $\sin x = \frac{r}{3} \rightarrow x$ $\sin x = 1 \rightarrow y$ $\sin x = -1 \rightarrow 0$ $R_f = [0, 4]$	5	7
ا) $y = \sin^2 x + \varepsilon \cos^2 x = 1 + \underbrace{3 \cos^2 x}_{[0, 3]} \rightarrow R_f = [1, \varepsilon]$ ب) $y = \frac{\frac{r \cos x}{\sin x}}{\frac{1}{\sin^2 x}} = r \cos x \sin x = \sin 2x$ $R_f = [-1, 1]$	5	8
ا) $y = \sin^4 x + \cos^4 x \xrightarrow{r=1} \frac{1}{\varepsilon} \leq \sin^4 x + \cos^4 x \leq 1$ $R_f = [\frac{1}{\varepsilon}, 1]$ ب) $y = [\sin^4 x + \cos^4 x] \xrightarrow{r=\varepsilon} \frac{1}{\Lambda} \leq \sin^4 x + \cos^4 x \leq 1 \xrightarrow{[]} \{0, 1\}$ $R_f = \{0, 1\}$	5	9
ا) $y = \frac{rx^2 + vx - \varepsilon}{x + \varepsilon} = \frac{(x + \varepsilon)(rx - 1)}{x + \varepsilon} = rx - 1 \rightarrow R_f = \mathbb{R} - \{-1\}$ ب) $\frac{x^3 - 1}{x - 1} = \frac{(x - 1)(x^2 + x + 1)}{x - 1} \xrightarrow{x \neq 1} x^2 + x + 1$ $\min \left \frac{-1}{\varepsilon} \right$ $\rightarrow R_f = [\frac{3}{\varepsilon}, +\infty)$	 	10