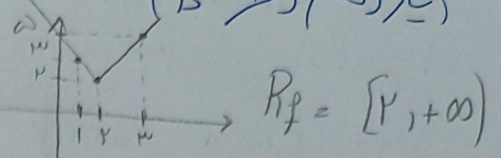


(تکلیف ۷)

(فاصله مسکن)

(یا زدهم رخ B)

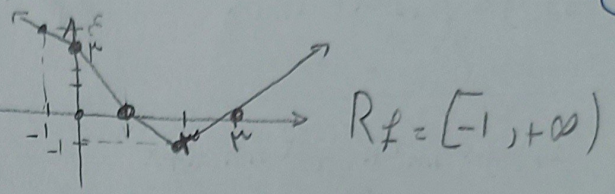
الف) $y = x + |2x - 4|$ $\begin{cases} x \geq 2 \\ x < 2 \end{cases}$



ب) $y = |x - 2| + |x - 1| - |x|$

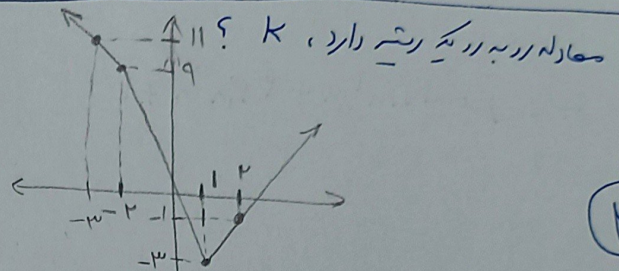
x	-1	0	1	2	3
y	4	3	0	-1	0

فصله $\rightarrow -x+3 \mid -x+3 \mid -x+1 \mid x-2$



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

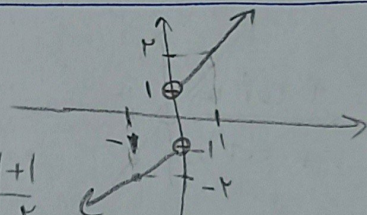
$\begin{cases} 3 - 3x + x + 2 = k \\ -3x + 5 = k \end{cases} \quad \begin{cases} 3 - 3x - x - 2 = k \\ -4x - 1 = k \end{cases} \quad \begin{cases} 3x - 3 - x - 2 = k \\ 2x - 5 = k \end{cases}$



$\begin{matrix} x & -3 & -2 & 1 & 2 \\ y & 11 & 9 & -3 & -1 \end{matrix}$ $K = -10$ $\rightarrow$ نقطه قطع کند

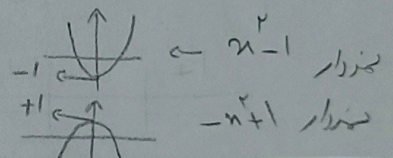
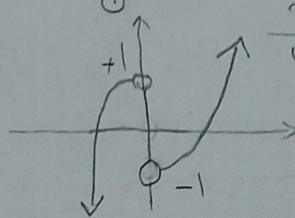
الف) $y = x + \frac{x}{|x|}$

$x + \frac{x}{-x} = x - 1$ $x + \frac{x}{x} = x + 1$

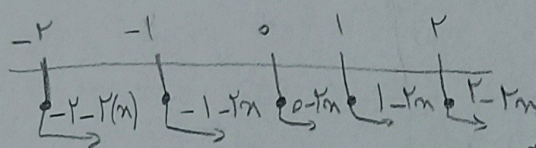


ب) $y = x|x| - \frac{x}{|x|}$

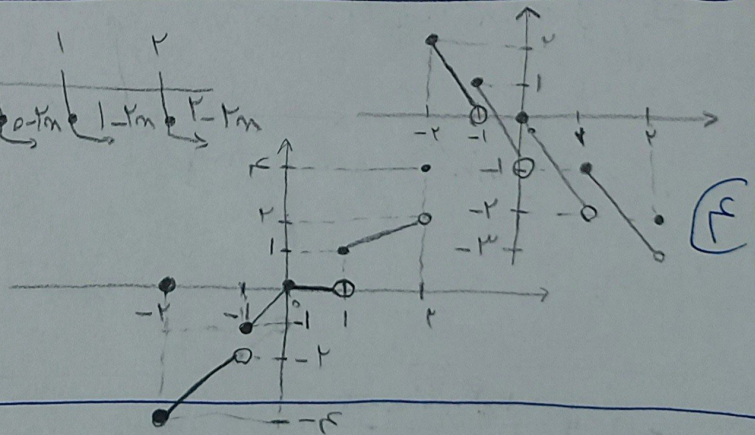
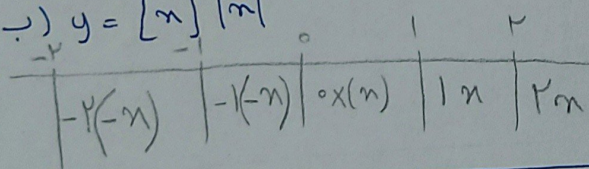
$-x^2 - (-1)$ $-x^2 + 1$



الف) $y = [x] - 2x$



ب) $y = [x] |x|$



الف) $y = 3x - [3x]$ $R_f = [0, 1)$

ب) $y = 4x - \{4x\}$ $R_f = [0, 4)$

ج) $y = x - \omega\left[\frac{x}{\omega}\right]$ $R_f = [0, \omega)$

د) $y = [2x] - 2x$ $R_f = (-1, 0]$

الف) $y = 3\sin n + 2\cos n \rightarrow -\sqrt{3^2+2^2} \leq 3\sin n + 2\cos n \leq \sqrt{3^2+2^2} \quad R_f = [-\sqrt{13}, \sqrt{13}]$

ب) $y = 8\sin n - 3\cos n \rightarrow -\sqrt{14^2+9} \leq 8\sin n - 3\cos n \leq \sqrt{14^2+9} \quad R_f = [-2, 2]$

ج) $y = [2\sin n + 0\cos n] \rightarrow R_f = [-\sqrt{4}, \sqrt{4}] \xrightarrow{\text{دقت، دقت}} R_f = \{-4, -2, -1, 1, 2, 4\}$

د) $y = \sqrt{\cos n - 2\sin n} \rightarrow -\sqrt{1^2+1} \leq -2\sin n + \cos n \leq \sqrt{1^2+1} \xrightarrow{\text{دقت، دقت}} R_f = [-\sqrt{2}, \sqrt{2}] \rightarrow [0, \sqrt{2}]$

الف) $y = \sin^2 n + 3\sin n + 2 \quad R_f = [0, 4]$

$\sin n = 1 \rightarrow 1 + 3 + 2 = 6$

$\sin n = -1 \rightarrow 1 - 3 + 2 = 0$

$\sin n = \frac{-b}{2a} = \frac{-3}{2} \rightarrow -\frac{3}{2} \leftarrow \text{چون } \sin n \text{ در } [-1, 1] \text{ نیست}$

ب) $y = 2\sin^2 n + 3\sin n + 2$

$\sin n = 1 \rightarrow 2 + 3 + 2 = 7$

$\sin n = -1 \rightarrow 2 - 3 + 2 = 1$

$R_f = [\frac{1}{14}, 7]$

$\sin n = \frac{-b}{2a} = \frac{-3}{4} \rightarrow \frac{1}{14} - \frac{9}{4} + \frac{1}{4} = \frac{14}{14} = 1$

الف) $y = \sin^2 n + 4\cos^2 n \rightarrow R_f = [1, 4]$

ب) $y = \frac{2\cot n}{1 + \cot^2 n} = 2 \frac{\cos n}{\sin n} \sin n = 2\cos n \sin n = \sin 2n$

$R_f = [-1, 1]$

الف) $y = \sin^4 n + \cos^4 n \rightarrow \frac{1}{4} \leq \sin^4 n + \cos^4 n \leq 1 \quad R_f = [\frac{1}{4}, 1]$

ب) $y = [\sin^4 n + \cos^4 n]$

$\frac{1}{4} \leq \sin^4 n + \cos^4 n \leq 1$

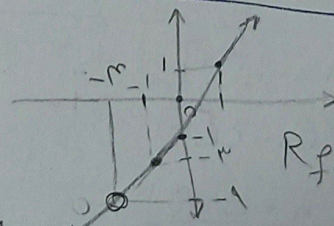
$\frac{1}{4} = \frac{1}{4}$

$R_f = [\frac{1}{4}, 1] \xrightarrow{\text{زیاده است}} R_f = \{0, 1\}$

الف) $y = \frac{m^2 + 7m - 4}{m + 4} = \frac{(m + 4)(m - 1)}{m + 4} = m - 1$

فقط به توجه شدیم به ریشه m که نمی توانیم از آن عبور

m	-1	0	1	-4
y	-5	-1	1	-9



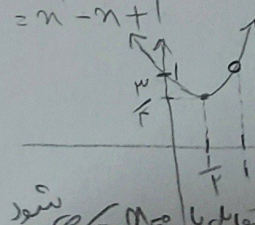
$R_f = R - \{-9\}$

ب) $y = \frac{m^2 - 1}{m - 1} = \frac{(m - 1)(m + 1)}{m - 1} = m + 1$

$\frac{-b}{2a} = \frac{1}{2}$

$\frac{-A}{2a} = \frac{1}{2}$

m	1
y	$(1)^2 - (1) + 1 = 1$



$R_f = [\frac{3}{2}, +\infty)$

چون m باید ترافیک را از $m = 1$ معادل با $m = 1$ شود