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$$f_{CM} = \frac{\square^r}{\square^r + \frac{r}{f}}$$

(1, 2)

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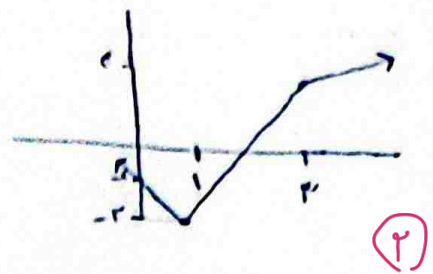
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حذف برد
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$$\Rightarrow R = [1, 4 \infty)$$

الف) $y = |x-2| - |x-3| \rightarrow -x-1 \begin{cases} x-2 < 0 \\ x-3 < 0 \end{cases} \rightarrow x < 2$
 $\downarrow$ (1) (2) $\rightarrow x > 3$
 $R = [-2, +\infty)$



ب) $y = |x-2| + |x+1| \xrightarrow{\text{نقطة}} \begin{cases} x < -1 \\ -1 < x < 2 \\ x > 2 \end{cases} \rightarrow R = [1, +\infty)$

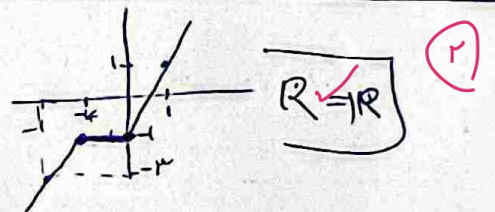
افضلها بـ $|x-2| + |x+1| = 4$ $\{ -2, 2 \}$ $\rightarrow$ $|x-2| + |x+1| = 4$

$-x+2+x+1 \leq 1 \rightarrow x \leq -2$
 $x-2-x-1 \leq 1 \rightarrow -3x \leq 1 \rightarrow x \geq -\frac{1}{3}$
 $x-2-x-1 \leq 1 \rightarrow -x \leq 0 \rightarrow x \geq 0$

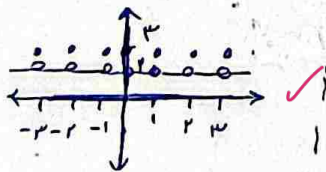
$|x-2| - |x+2| \leq 1$
 $(2) \quad (-1) \quad (2)$

محدوده جواب: $(-\infty, -2] \cup [-\frac{1}{3}, +\infty)$

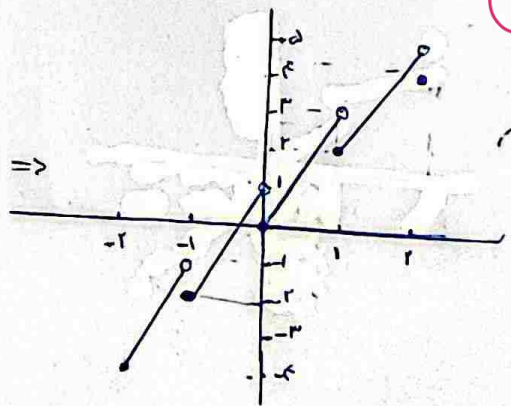
$y = 3x - |x+1| + |x| \Rightarrow \begin{cases} 0 = x \rightarrow y = -1 \\ -1 = x \rightarrow y = -1 \\ 1 = x \rightarrow y = 1 \\ -1 = x \rightarrow y = -3 \end{cases}$



الف) $y = [x] + 3 + [-x] \rightarrow \begin{cases} [x] + [-x] = 0 ; x \in \mathbb{Z} \rightarrow 3 ; x \in \mathbb{Z} \\ [x] + [-x] = -1 ; x \notin \mathbb{Z} \rightarrow 2 ; x \notin \mathbb{Z} \end{cases} \Rightarrow R = \{2, 3\}$



ب) $y = 3x - [x] \rightarrow \begin{cases} x < -1 \rightarrow y = 3x+2 \\ -1 < x < 0 \rightarrow y = 3x+1 \\ 0 < x < 1 \rightarrow y = 3x \\ 1 < x < 2 \rightarrow y = 3x-1 \\ x = 2 \rightarrow y = 3x-2 \end{cases}$



الف) $y = \sin^2 x + \sin x + 1 \rightarrow \sin x \in [-1, 1] \rightarrow y \in [1, 3] \rightarrow R = [1, 3]$

ب) $y = \sin^2 x + \sin^2 x + 1 \rightarrow \sin^2 x \in [0, 1] \rightarrow y \in [1, 2] \rightarrow R = [1, 2]$