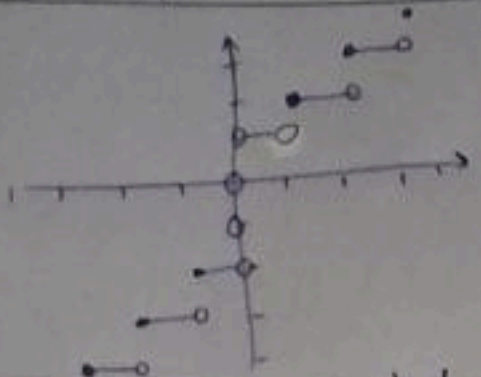
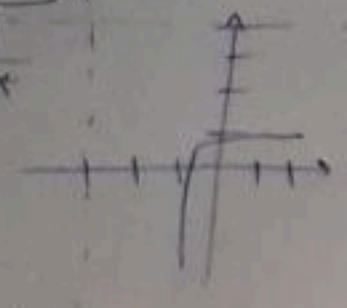
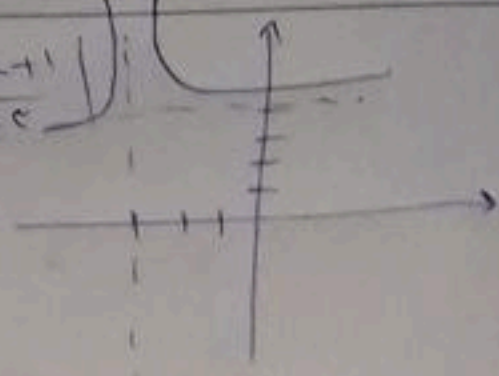


الف) $\sin A \rightarrow R = [-1, 1]$ $\sin^2 A \rightarrow R = [0, 1]$ $\sqrt{\sin^2 A} \rightarrow R = [0, 1]$ $\sqrt{\sin^2 A} - 1 \rightarrow R = [-1, 1]$	ب) $\cos^2 A \rightarrow R = [0, 1]$ $\sqrt{\cos^2 A} \rightarrow R = [0, 1]$ $\sqrt{\cos^2 A} - 1 \rightarrow R = [-1, 1]$
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$x > 0 \rightarrow 1 + [x]$ $x < 0 \rightarrow -1 + [x]$ $x = 0 \rightarrow$ ترتیب $\frac{1}{2}, \frac{3}{2}, \dots$		۲
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$y = \frac{x+1}{x+2}$ 	$y = \left \frac{x+1}{x+2} \right$ 	۳
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$x = 2, y = 1$ (مقادیر) $x \geq 2, y \geq 1$ (مقادیر) $(x-2) + (y-1) = 3$ $y = 6 - x$	$x < 2, y > 1$ (مقادیر) $(x-2) + (y-1) = 3$ $y = 6 - x$ $x < 2, y < 1$ (مقادیر) $(x-2) + (y-1) = 3$ $y = 6 - x$	۴
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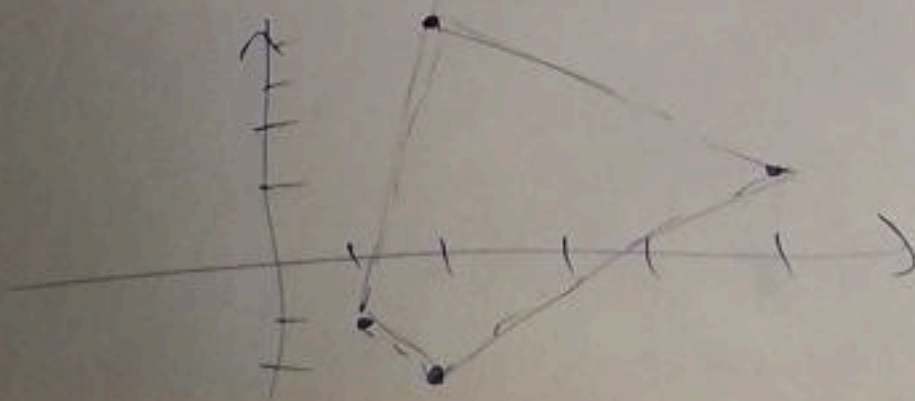
الف) $x + \frac{1}{x} \geq 2$ $x + \frac{1}{x} + 2\sqrt{x \cdot \frac{1}{x}} \geq 2 + 2$ $\rightarrow x + 2\sqrt{x} \rightarrow R = [1, \infty)$	ب) $R: \sin x = [-1, 1]$ $y = 3 + 2\sin x - \sin^2 x$ $3 + 2(1) - 1 = 4$ $3 + 2(-1) - 1 = 0 \rightarrow R = [0, 4]$	۵
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تکلیف

سوال ۱

$\mathcal{G}_1: x$	$(-1 \leq x \leq 1)$	ارائه
$\mathcal{G}_2: x^2$	$(-1 \leq x \leq 1)$	
$\mathcal{G}_3: x - 1$	$(1 \leq x \leq 5)$	
$\mathcal{G}_4: x - 2$	$(1 \leq x \leq 5)$	

$(-1, 1) \quad (1, 4) \quad (5, 1) \quad (1, -2) \in \mathcal{G}_1 \cup \mathcal{G}_2$



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$$D = \{1, 2, 3, 4, 5, 6, 7, 8\}$$

$$R = \left\{ \frac{1}{2}, \dots, \frac{1}{8} \right\}$$

G(6, 6)

$$1 - \left(\frac{1}{2} + \frac{1}{4} + \frac{1}{8} \right) = \frac{1}{8}$$

6

$$\sqrt{ax^2 + bx + c} \rightarrow a = 1 \rightarrow -b \rightarrow \sqrt{b^2 - 4ac}$$

$$D = [r, +\infty)$$

$$\rightarrow y = 1 \rightarrow \sqrt{b - 4ac} \rightarrow \frac{b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$R_2[r, +\infty)$$

7

$$\frac{x^2 - 2x}{x + 1} \rightarrow \frac{x(x - 2)}{x + 1} = (x - 1) \frac{x + 1}{x + 1}$$

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

$$\frac{x(x - 2)}{x + 1} \rightarrow x = 1 \rightarrow y = 1 \rightarrow C = 1$$

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

8

$$\sqrt[3]{(x - 1)^3} = \sqrt[3]{x^3 - 3x^2 + 3x - 1}$$

$$a = -9$$

$$b = 17$$

$$a = -9 \rightarrow y = 1$$

$$a = 10 \rightarrow y = 1$$

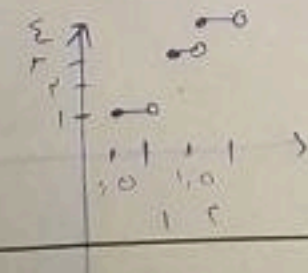
9

$$y = \left[x + \frac{1}{x} \right] + [2] \quad \frac{1}{x} \leq x \leq 2$$

$$\frac{1}{x} \leq x \leq 2$$

$$1 \leq x \leq 2$$

$$\frac{1}{x} \leq x \leq 2$$



$$\frac{1}{x} \leq x \leq 2$$

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