

الف) $f(x) = 2 \sin^2(x + \frac{\pi}{4}) - 1$

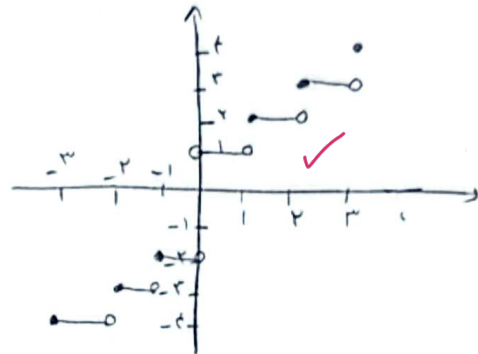
$\sin^2 \frac{1}{2}$ $R = [-1, 1]$

ب) $g(x) = 2 \cos^2 x - 4$

$\cos^2 \frac{1}{2}$ $R = [-4, -1]$ (2) (1)

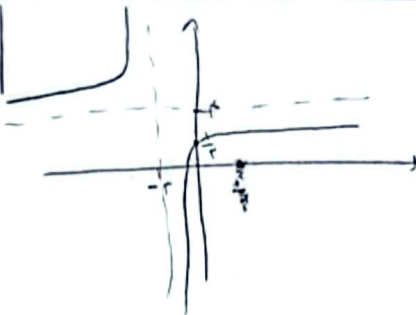
$y = \frac{x}{|x|} + [x]$

$-2 \leq x < -1 \rightarrow y = -1 - 2 = -3$
 $-1 \leq x < 0 \rightarrow -1 - 1 = -2$
 $0 \leq x < 1 \rightarrow 1 + 0 = 1$
 $1 \leq x < 2 \rightarrow 1 + 1 = 2$
 $2 \leq x < 3 \rightarrow 1 + 2 = 3$
 $x \geq 3 \rightarrow 1 + 3 = 4$

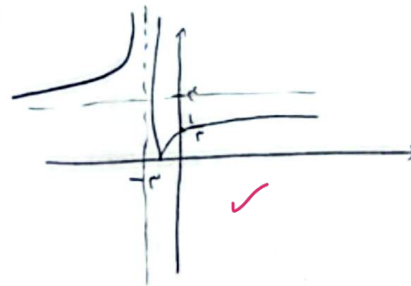


(2) (1)

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

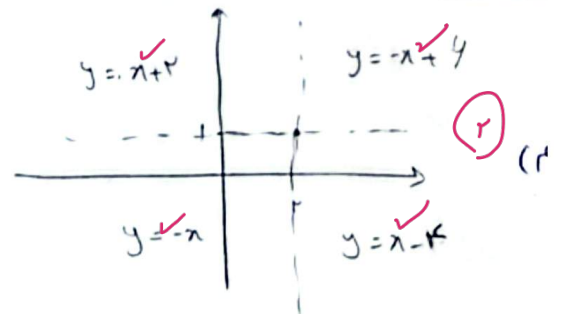
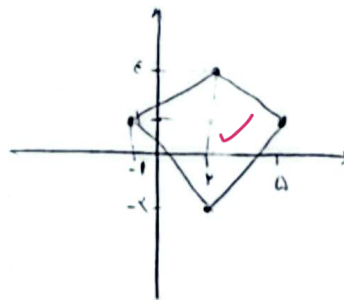


قرینہ



(2) (1)

$|x-2| + |y-1| = 3$



(2) (1)

الف) $f(x) = x + \frac{1}{x} + 2\sqrt{x + \frac{1}{x}}$

$x + \frac{1}{x} \geq 2 \rightarrow [2, \infty)$

$t = \infty \rightarrow +\infty$

$t = \sqrt{2} \rightarrow f(x) = 2 + \sqrt{2}$

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

$R = [2 + \sqrt{2}, \infty)$

ب) $y = (2 - \sin x)(1 + \sin x)$

$\rightarrow 2 + 2 \sin x - \sin x - \sin^2 x = y \rightarrow y = -\sin^2 x + 2 \sin x + 2$

$\sin x \frac{1}{2}$ $-1 + 2 + 2 = 3$
 $-\frac{b}{2a}$ $-1 - 2 + 2 = 0$
 $-\frac{1}{1}$ $-\frac{1}{1} = -1 \rightarrow 0$

$R = [0, 3]$

(2) (1)

