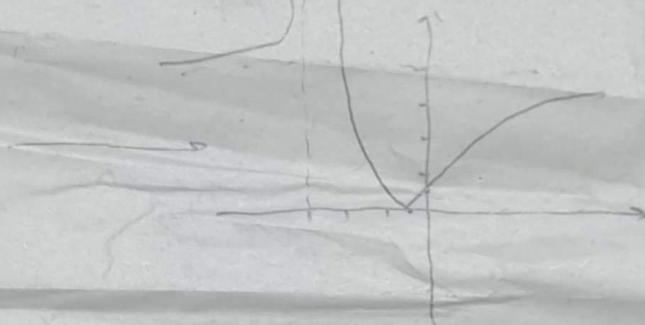
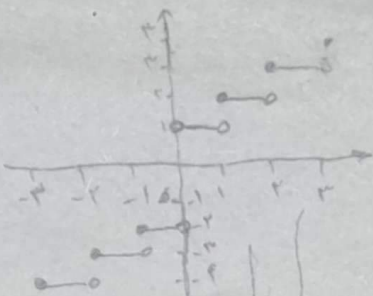


$$-1 \leq \cos \alpha \leq 1 \rightarrow -V \leq V \cos \alpha \leq V \rightarrow R_f = [-V, V] \quad (a) \textcircled{1}$$

$$-1 \leq \cos \alpha \leq 1 \rightarrow -V \leq V \cos \alpha \leq V \rightarrow -V \leq V \cos \alpha - V \leq -1 \rightarrow R_f = [-V, -1] \quad (b) \textcircled{2}$$

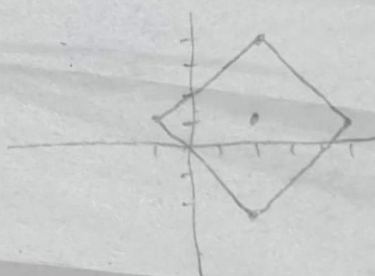
$$x \geq 0 \rightarrow 1 + [x]$$

$$x < 0 \rightarrow -1 + [x]$$



$$\frac{a}{b} \leq r$$

$$\begin{cases} x - r + y - 1 \leq r \rightarrow y \leq x + r \\ r - x + y - 1 \leq r \rightarrow y \leq x + r \\ r - x + 1 - y \leq r \rightarrow y \geq x \\ x - r + 1 - y \leq r \rightarrow y \geq x - r \end{cases}$$



$$x \geq 0 \rightarrow x + \frac{1}{x} \geq r \Rightarrow x + \frac{1}{x} + r \sqrt{x + \frac{1}{x}} \geq r + r \sqrt{r} \rightarrow R_f = [r + r \sqrt{r}, +\infty) \quad (c) \textcircled{3}$$

$$-\sin^2 \alpha + r \sin \alpha + r \frac{\sin \alpha}{r} - 1 - r + r \leq 0 \rightarrow \frac{\sin \alpha}{r} - 1 + r + r \leq r \rightarrow \frac{-b}{ra} \leq 1 \rightarrow R_f = [0, r] \quad (d) \textcircled{4}$$

$$(1 \times 9) + \left(\frac{(1+9) \times 9}{r} \right) \times \left(-\frac{1}{r} \right) = 9 - 10 \leq V \Delta$$

$$a \leq 0 \rightarrow b + c \leq 0 \rightarrow c \leq -b \quad b + c \leq 1 \rightarrow b - r b \leq 1 \rightarrow b \leq \frac{1}{1-r}$$

$$g(x) = \sqrt{x^2 + r} \rightarrow \min \left\{ \frac{0}{r} \right\} \rightarrow [r, +\infty)$$

$$\frac{n(n-1)}{n+1} = \frac{n(n-1)(n+1)}{(n+1)} = n^2 - 1 \rightarrow \begin{cases} 1 \\ -1 \end{cases} \Rightarrow (x-1)$$

(1)

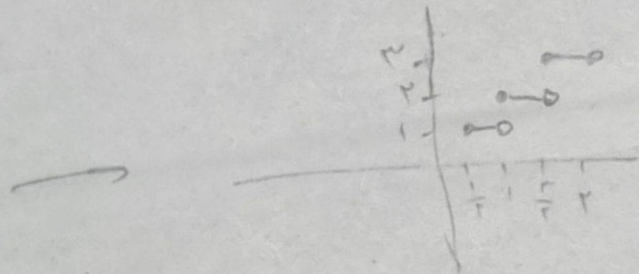
$$a_{x-1} \quad n^2 - 1 \neq 1 \rightarrow n^2 - 1 \neq 1 \neq 0 \rightarrow n^2 - 1 \neq 0 \Rightarrow n \neq \pm 1$$

$$\frac{x-1}{x(-1)} = -1$$

$$n^2 + an + b = 1 \quad (n-1)^2 = n^2 - 4n + 1 \Rightarrow a = -4, b = 1$$

(4)

$$D_f \in [-4, 12] \xrightarrow{a=-4} -4-2 \in 1 \quad n=12 \rightarrow 12-2 \in 1 \quad R_f \in [-1, 10]$$



پاره خط (5)