

الف) $\sin^2 n \leq 1 \rightarrow 0 \leq \sin^2 n \leq 1 \rightarrow -1 \leq \sin n \leq 1 \rightarrow \boxed{-1 \leq \sin^2 n \leq 1} \quad [-1, 1]$

ب) $\cos^2 n \leq 1 \rightarrow -1 \leq \cos n \leq 1 \rightarrow -1 \leq \cos^2 n \leq 1 \rightarrow \boxed{-1 \leq \cos^2 n \leq 1} \quad [-1, 1]$

الف) $x \in (-1, 1) \rightarrow -1 < x < 1$

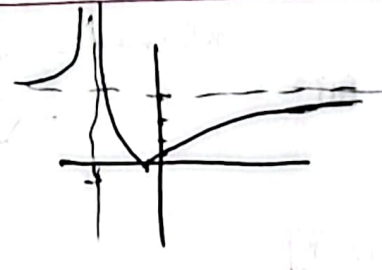
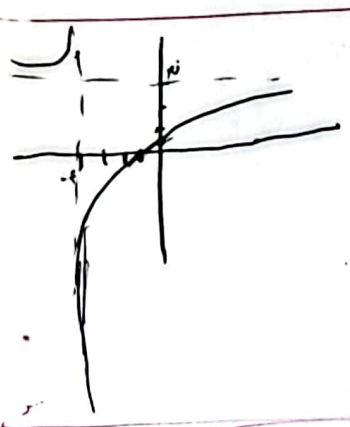
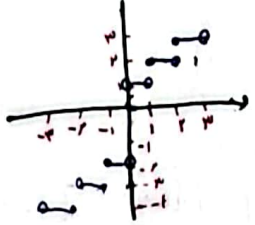
$-1 < x < 1 \rightarrow -1 < x < 1$

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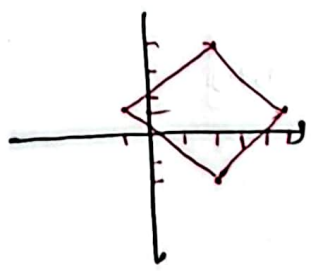
$0 < x < 1 \rightarrow 1$

$1 < x < 2 \rightarrow 2$

$2 < x < 3 \rightarrow 3$



$x+y \in (-1, 1) \rightarrow x+y \in (-1, 1) \rightarrow x+y \in (-1, 1)$
 $x+y \in (-1, 1) \rightarrow x+y \in (-1, 1) \rightarrow x+y \in (-1, 1)$
 $-1 < x+y < 1 \rightarrow x+y \in (-1, 1) \rightarrow x+y \in (-1, 1)$
 $x+y \in (-1, 1) \rightarrow x+y \in (-1, 1) \rightarrow x+y \in (-1, 1)$



الف) $x \in (-1, 1) \rightarrow x \in (-1, 1) \rightarrow x \in (-1, 1) \rightarrow \boxed{R_f = [-1, 1]}$

ب) $y \in (-1, 1) \rightarrow y \in (-1, 1) \rightarrow y \in (-1, 1) \rightarrow \boxed{R_g = [-1, 1]}$

$$f(n) = \dots \frac{1}{p} \dots + 1$$

$$1 \rightarrow -\frac{1}{p} + 1 = \frac{p-1}{p}$$

$$2 \rightarrow -\frac{2}{p} + 1 = \frac{p-2}{p}$$

$$\vdots$$

$$q \rightarrow -\frac{q}{p} + 1 = \frac{p-q}{p}$$

$$D = \{1, 2, 3, \dots, p\}$$

$$R = \{\frac{1}{p}, \frac{2}{p}, \dots, \frac{p}{p}\}$$

$$\frac{p(1 + \dots + p)}{p^2} = \frac{p}{p} \frac{(1+p)}{2} = \frac{p+1}{2} = \frac{p+1}{2}$$

$$f(n) = \sqrt{an^2 + bn + c} \quad D = [r_1, +\infty) \rightarrow a < 0 \quad f(n) = \sqrt{bn + c}$$

$$\begin{cases} \sqrt{b+c} \\ \sqrt{b+c} \end{cases} \quad g(n) = \sqrt{n^2 + t} \quad \frac{-\Delta}{f_a} = \frac{(-1) \cdot 1}{1} = -1$$

$$b \leq 1, c \leq -1$$

$$f_j = \sqrt{(1+\infty)} = [1, +\infty)$$

$$f(n) = \frac{n^p - f_n}{n+r} = \frac{n^p(n-r)}{n+r} = n(n-r) + n^p - r_n$$

$$D = R(a, b) \quad R = [c, +\infty) = \{1\}$$

$$C = \frac{\Delta}{f_a} = -1$$

$$F\left(\frac{f-r}{r}\right) = f(-1) = (-1)^p - r(-1) = \dots$$

$$y = \sqrt{n^p + an^r + bn - 1} = \sqrt{(n-r)^p} = \sqrt{n^p - \dots + 1}$$

$$D = [-r, 1r]$$

$$a = -1, b = 1r$$

$$\left\{ \begin{matrix} -1 \\ 1 \end{matrix} \right\} \rightarrow R_f = [-1, 1]$$

$$y = [n] + [n + \frac{1}{p}] \quad [\frac{1}{p}, 2)$$

$$[\frac{1}{p}, 1] \rightarrow 0 + 1 = 1$$

$$[1, \frac{p}{p}] \rightarrow 1 + 1 = 2$$

$$[\frac{p}{p}, 2) \rightarrow 1 + 2 = 3$$

