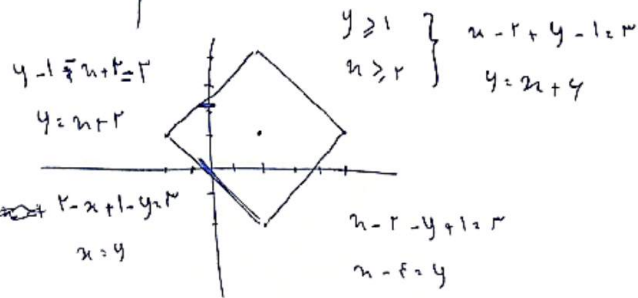
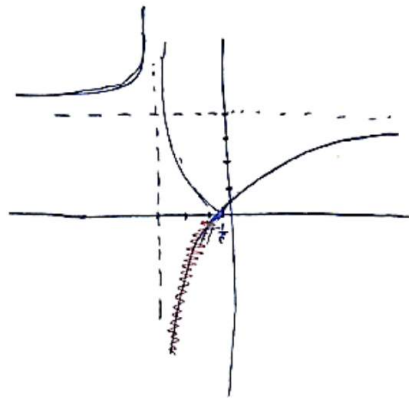
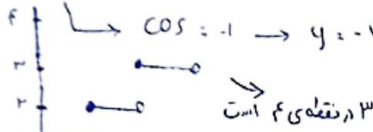


1. حل $r \sin^2 \left(n + \frac{\pi}{r} \right) = 1 \rightarrow n + \frac{\pi}{r} = 0 \rightarrow y = -1$
 $\rightarrow n + \frac{\pi}{r} = 1 \rightarrow y = 1$ } $[-1, 1] = R$

2. $r \cos^2 n = 1 \rightarrow \cos = 1 \rightarrow y = 1$
 $\rightarrow \cos = -1 \rightarrow y = -1$ } $[-1, 1] = R$



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

4. الف: $f(n) = n + \frac{1}{n} + r \sqrt{n + \frac{1}{n}}$
 $\rightarrow [r, +\infty) \rightarrow [r\sqrt{r}, +\infty) \rightarrow R = [r + r\sqrt{r}, +\infty)$

ب: $(r - \sin n)(1 + \sin n) = -(\sin^2 n - r \sin n - r)$
 $\rightarrow \sin n = 1 \rightarrow y = r$
 $\rightarrow \sin n = -1 \rightarrow y = 0$
 $\rightarrow \sin n = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = 1 \rightarrow y = r$ } $R = [0, r]$

$$8 \quad -\frac{1}{r} \underbrace{(1+r+\dots+q)}_{f_0} + q_0 = \boxed{V_0}$$

$$9 \quad a=0$$

$$\left. \begin{array}{l} rb+c=0 \\ rb+c=1 \end{array} \right\} \begin{array}{l} b=1 \\ c=-1 \end{array} \rightarrow \sqrt{n^2+f} \rightarrow \boxed{R=[r, +\infty)}$$

$$11 \quad \frac{n^r - f_n}{n+r} = \frac{n(n+r)(n-r)}{n+r} = n^r - r_n \rightarrow n^r - r_n = 1 \rightarrow n^r - r_n - 1 = 0$$

$$(n-r)(n+r) = 0 \rightarrow n = -r, f \rightarrow \underbrace{a, b}$$

$$n^r - r_n \rightarrow \left. \frac{d}{dn} \right|_{-1} \rightarrow c = -1$$

$$f\left(\frac{-r+f}{-r}\right) = f(-1) = 1, r, \boxed{13}$$

$$9 \quad \sqrt[n]{n^r + an^r + bn} = \sqrt[n]{(n-r)^n} \rightarrow n^r - 9n^r + 11n - 1 \rightarrow a = -9, b = 11$$

$$D: [-9, 11] \rightarrow x = -9 \rightarrow y = -1$$

$$\hookrightarrow x = 11 \rightarrow y = 10 \quad \left\{ \boxed{R: [-1, 10]} \right\}$$

$$10 \quad y = [n] + \left[n + \frac{1}{r}\right] \rightarrow D = \left[\frac{1}{r}, r\right)$$

$$\frac{1}{r} \leq x < 1 \rightarrow y = 1$$

$$1 \leq x < \frac{r}{r} \rightarrow y = r$$

$$\frac{r}{r} \leq x < r \rightarrow y = r$$

