

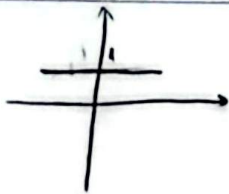
الف) $y^3 - n = 2n^2$ طبق $\begin{cases} (n_1, y_1) \in f \\ (n_2, y_2) \in f \end{cases} \xrightarrow{if n_1 = n_2} y_1 = y_2$ ①

$\Rightarrow y_1^3 - n_1 - 2n_1^2 = y_2^3 - n_2 - 2n_2^2 \xrightarrow{if n_1 = n_2} y_1^3 = y_2^3 \xrightarrow{\sqrt[3]{\quad}} y_1 = y_2$ تابع

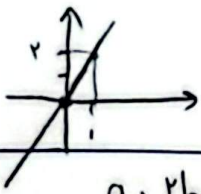
ب) $|y| + y^3 = x^3 + 3 \Rightarrow |y| = 3 \Rightarrow y = \pm 3$ تابع

ج) $\sqrt{n-2} + |y-2| = 0$ مبرهنه با هم $\Rightarrow |y-2| = 0 \Rightarrow y = 2$ تابع
(صورت منفی نمی‌تواند باشد)

د) $\hat{y} = \cos y \Rightarrow y = 90^\circ, 270^\circ$
 $y = \frac{\pi}{2} \text{ و } \frac{3\pi}{2}$ تابع



الف) تابع ثابت $y = k$ طبق [3] $y = 1$



ب) تابع قطره $y = an + b$ طبق نقشه ۱ و ۲ $y = 2n$

الف) تابع همبانی $y = an + b$ $a=1, b=0$ $a+2b = 1+2(0) = 1$ ③

ب) طبق نقشه ۱ و ۲ در سی $y = n^2 + an + b$
 $-\frac{b}{2a} = 2, 1 = 4 + 4a + b \Rightarrow -3 = 4a + b \xrightarrow{b = -4a} -3 = 4a - 4a = 0$

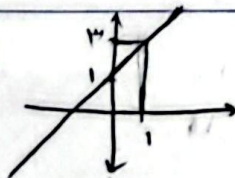
$-b \leq 4a \Rightarrow b \geq -4a$

$a+2b = \frac{4}{2} - \frac{4^2}{2} = -10$

$-4 = b, \frac{4}{2} = a$

الف) $y = 2n + 1$

n	y
0	1
1	3

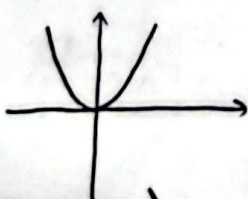


ب) $y = -3n + 1$

n	y
0	1
1	-2



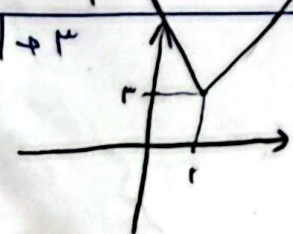
ج) $y = n^2$



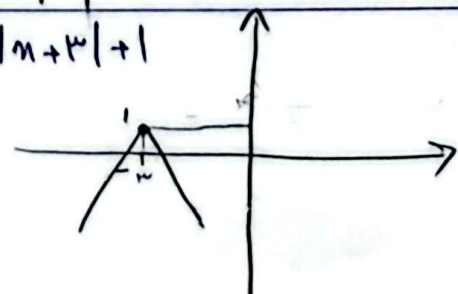
د) $y = n^3$



الف) $y = |n-2| + 3$



ب) $y = -|n+3| + 1$



الف) $y = \frac{n+r}{n^2-rn}$ $n^2-rn \neq 0 \Rightarrow n(n-r) \neq 0$ $(Df = \mathbb{R} - \{0, r\})$ (4)

ب) $y = \frac{n+r}{n^2-vn+14}$ $n^2-vn+14 \neq 0 \Rightarrow \frac{-b \pm \sqrt{b^2-4ac}}{2a} \Rightarrow v \pm \frac{\sqrt{r^2-4r}}{2}$ $(Df = \mathbb{R})$

ج) $y = \frac{n+r}{n^2+n+r}$ $n^2+n+r \neq 0 \Rightarrow \frac{-1 \pm \sqrt{1-4r}}{2}$ $(Df = \mathbb{R})$

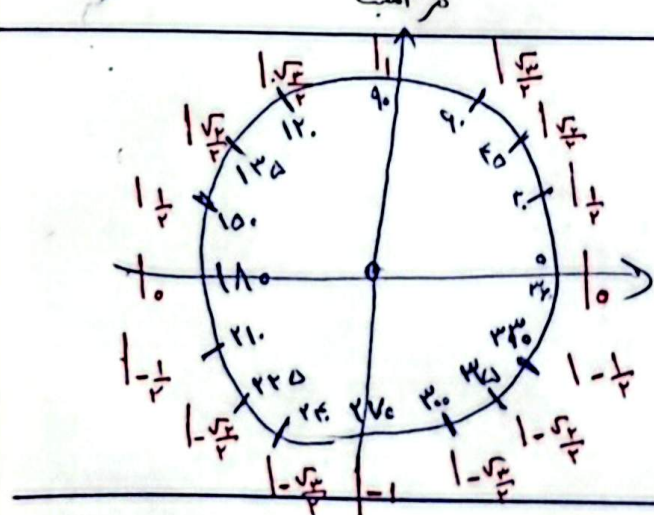
د) $y = \frac{n+r}{2r^2-rn}$ $2r^2-rn \neq 0 \Rightarrow (n-r)(n+2r) \neq 0$ $(Df = \mathbb{R} - \{0, r, -2r\})$

الف) $y = \sqrt{4-n} + \sqrt{n-2} \rightarrow n-2 \geq 0 \Rightarrow n \geq 2$ $(Df = [2, 4])$ (5)

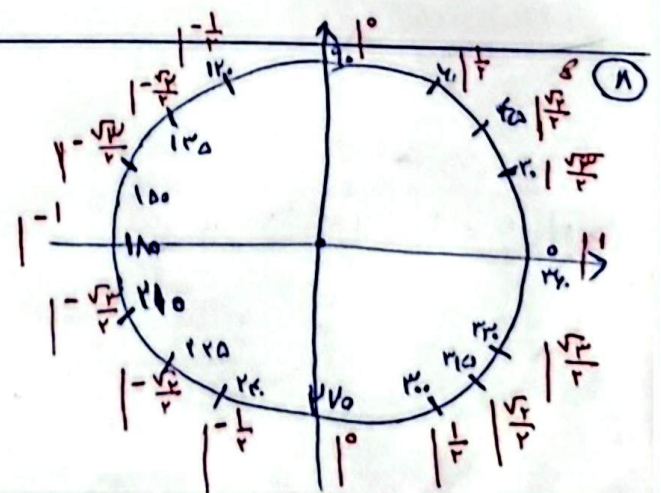
ب) $y = \frac{r_n+1}{n^2+1} \Rightarrow n^2+1 \neq 0 \rightarrow n \neq -1 \checkmark$ $(Df = \mathbb{R})$

ج) $y = \frac{\sqrt{n-2}}{n-2} \Rightarrow n-2 \neq 0 \rightarrow n \neq 2$, $n-2 \geq 0 \Rightarrow n \geq 2$ $(Df = [2, +\infty) - \{2\})$

د) $y = \frac{r_n+r}{|n|+n^2} \Rightarrow |n|+n^2 \neq 0$ $(Df = \mathbb{R} - \{0\})$



(9)



(10)

الف) قوس ربعی کینوس $\frac{2\pi}{3} = \frac{1}{3}$ $\left(\frac{1}{3} \right) \leftarrow$ سینوس زاویه 30° و 150° $\left(\frac{5\pi}{6} < \frac{\pi}{6} < \frac{5\pi}{6} \right)$

ب) قوس ربعی کینوس $\frac{11\pi}{6} = \frac{\sqrt{3}}{2}$ $\leftarrow$ سینوس زاویه 30° و 210° $\left(\frac{4\pi}{3} < \frac{5\pi}{3} < \frac{5\pi}{3} \right)$