

الف) $y = \frac{n+r}{n^2-r^2} \Rightarrow n^2-r^2=0 \Rightarrow n(n-r)=0 \Rightarrow n=r \text{ or } n=0 \Rightarrow D_f = \mathbb{R} - \{0, r\}$

ب) $\frac{n+r}{n^2-r^2} = y \Rightarrow n - \sqrt{n+1}y \Rightarrow \Delta < 0 \Rightarrow D_f = \mathbb{R}$

ج) $\frac{n+r}{n^2+r^2} = y \Rightarrow n^2+n+r \Rightarrow \Delta < 0 \Rightarrow D_f = \mathbb{R}$

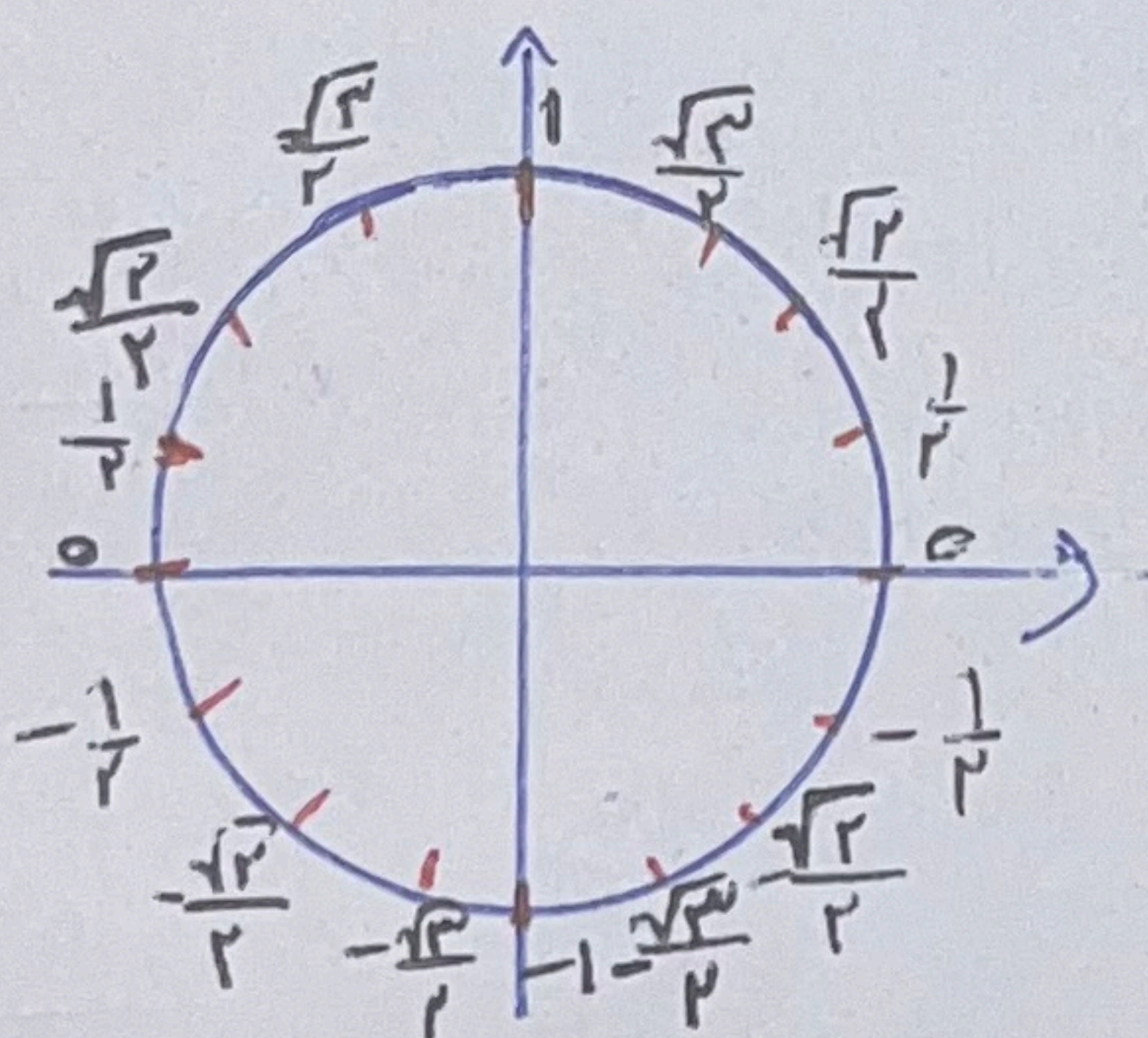
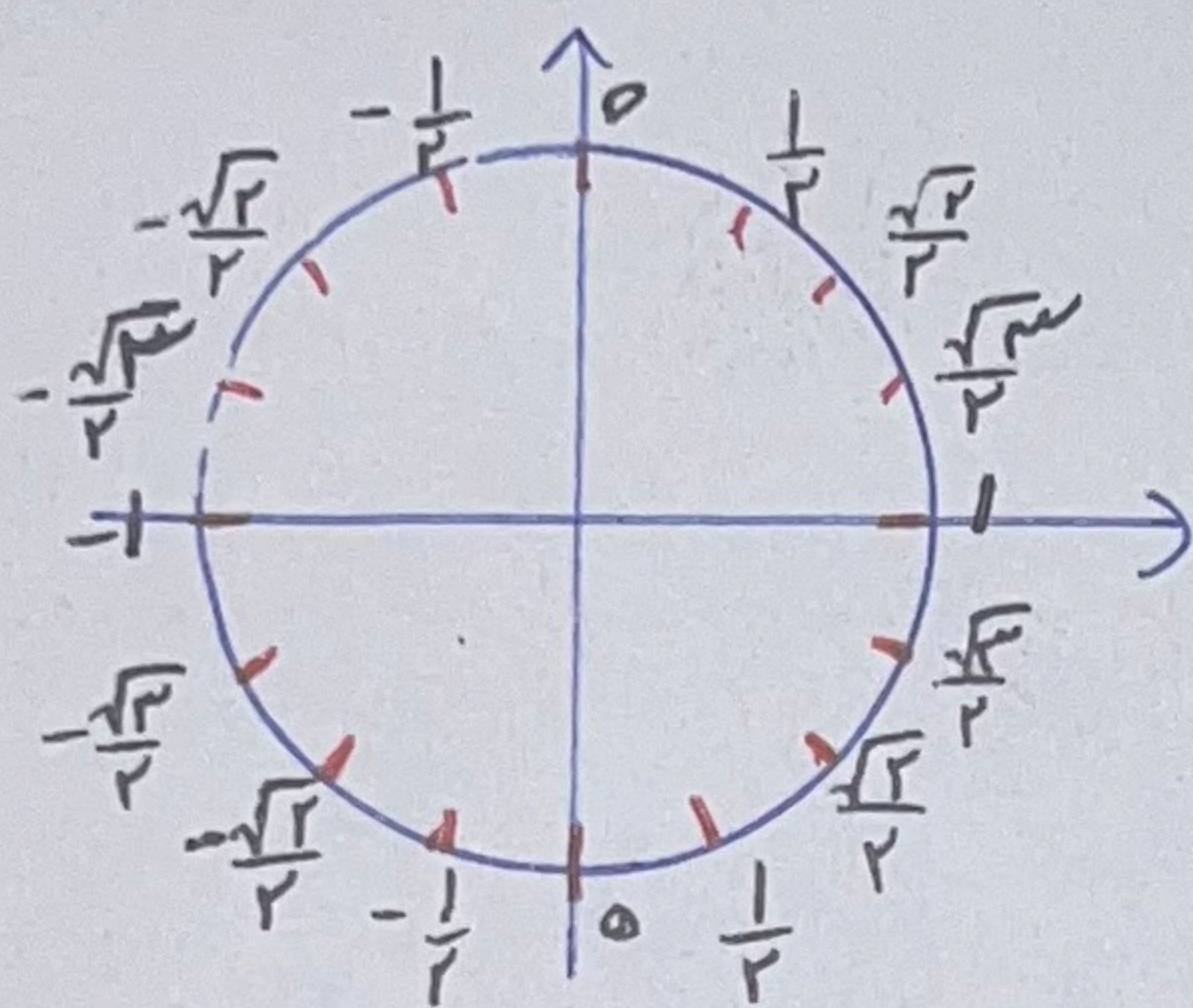
د) $\frac{n+r}{n^2-r^2} = y \Rightarrow n^2-r^2=0 \Rightarrow n^2(n^2-r^2)=0 \Rightarrow n^2=r \text{ or } n=0 \Rightarrow D_f = \mathbb{R} - \{r, 0\}$

الف) $\sqrt{y-n} + \sqrt{n-r} = y \Rightarrow y-n \geq 0 \Rightarrow n \leq y \Rightarrow n-r \geq 0 \Rightarrow n \geq r \Rightarrow D_f = [r, y]$

ب) $\frac{r(n+1)}{n^2+1} = y \Rightarrow n^2+1=0 \Rightarrow n^2=-1 \Rightarrow n=1 \Rightarrow D_f = \mathbb{R} - \{1\}$

ج) $\frac{\sqrt{n-r}}{n-r} = y \Rightarrow n-r \geq 0 \Rightarrow n \geq r \Rightarrow n-r=0 \Rightarrow n=r \Rightarrow D_f = [r, +\infty) - \{r\}$

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



$\cos \frac{r\pi}{y} = -\frac{1}{r} \Rightarrow \frac{1}{r}$

$\sin \frac{\pi}{y}, \sin \frac{5\pi}{y}$

الف

$\cos \frac{11\pi}{y} = \frac{\sqrt{3}}{r} \Rightarrow \frac{\sqrt{3}}{r}$

$\sin \frac{V\pi}{y}$

$\sin \frac{11\pi}{y}$

ب

