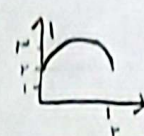
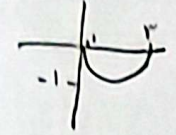
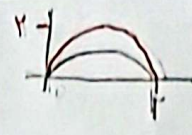


ج ۱ 	الف 	۱
د  ✓	ب 	۱
ج ۱ $(n-1)(n-\omega) < 0$ $\frac{1}{1+\phi} - \frac{\omega}{\phi+1}$ (۱، ω)	الف ۱ $(n-\frac{3}{2})(n-\frac{1}{2}) > 0$ $\frac{n}{1+\phi} - \frac{3}{\phi+1}$ $(-\infty, \frac{1}{2}) \cup (\frac{3}{2}, \infty)$	۲
د ۱ $(n-1)(n-\frac{3}{2}) \leq 0$ $\frac{1}{1+\phi} - \frac{3}{\phi+1}$ [۱، ۳] ✓	ج ۲ $(n+\frac{1}{2})(n+\frac{3}{2}) \geq 0$ $\frac{1}{1+\phi} - \frac{3}{\phi+1}$ $(-\infty, -\frac{1}{2}] \cup [-\frac{3}{2}, \infty)$	۲
ب ۱ $\frac{(n-1)(n-1)}{(n-1)(n-\omega)} \geq 0$ $\frac{1}{1+\phi} - \frac{\omega}{\phi+1}$ $(-\infty, -1] \cup (\omega, \infty)$ ✓	الف ۲ $\frac{(n-1)(n-2)}{(n-\omega)} < 0$ $\frac{1}{1+\phi} - \frac{\omega}{\phi+1}$ $(-\infty, 1) \cup (2, \omega)$	۲
ب ۲ $\frac{(n-4)(n+4)}{(n-1)(n-1)} \geq 0$ $\frac{1}{1+\phi} - \frac{4}{\phi+1}$ $(-\infty, -4] \cup (1, 4) \cup (4, \infty)$ ✓	الف ۳ $\frac{(n-1)(n^2+n+1)}{2(n^2-1)}$ $\frac{(n-1)(n+1)n}{2(n-1)(n+1)}$ $\Delta = 1 - 4 = -3$ $\frac{1}{1+\phi} - \frac{4}{\phi+1}$ $(-\infty, -1) \cup (0, 1) \cup (1, \infty)$	۴
ج ۲ $n-2 \geq 0 \Rightarrow n \geq 2$ $3 - \sqrt{n-2} \geq 0 \Rightarrow \sqrt{n-2} \leq 3 \Rightarrow n-2 \leq 9 \Rightarrow n \leq 11$ $2 \leq n \leq 11 \Rightarrow [2, 11]$ ✓	الف ۳ $2-n \geq 0 \Rightarrow n \leq 2$ $4 - \sqrt{4-n} \geq 0 \Rightarrow \sqrt{4-n} \leq 2 \Rightarrow 4-n \leq 4 \Rightarrow -1 \leq n$ $-1 \leq n \Rightarrow [-1, 2]$	۵

$r \cdot r^r \geq 0 \rightarrow r^r \leq r \rightarrow r^r \leq r $ $\sqrt{r} \leq r \leq \sqrt{r} \rightarrow [-\sqrt{r}, \sqrt{r}]$ (P) ✓	$r \cdot r - r \geq 0 \rightarrow r \cdot r \geq r$ $ r \geq r \rightarrow r \geq r$ $r \leq -r$ $(-\infty, -r] \cup [r, \infty)$	6
$n \geq 0$ $\sqrt{n} - r \neq 0 \rightarrow \sqrt{n} \neq r \rightarrow n \neq r^2$ $[0, r^2) \cup (r^2, \infty)$ (P) ✓	$ n - r^2 \neq 0 \rightarrow n \neq r^2$ $n \neq \pm r^2 \Rightarrow D = \mathbb{R} - \{-r^2, r^2\}$	7
$r \sin n + 1 \neq 0 \rightarrow r \sin n \neq -1$ $\sin n \neq -\frac{1}{r}$ $D = \mathbb{R} - \{r k\pi + \frac{\pi}{2}, r k\pi - \frac{\pi}{2}\}$	$r \cos n - 1 \neq 0 \rightarrow r \cos n \neq 1$ $\cos n \neq \frac{1}{r}$ $D = \mathbb{R} - \{r k\pi \pm \frac{\pi}{r}\}$	8
$r \sin^2 n - r^2 \neq 0 \rightarrow r \sin^2 n \neq r^2$ $\sin^2 n \neq \frac{r}{r} \rightarrow \sin^2 n \neq \frac{r}{r}$ $D = \mathbb{R} - \{k\pi \pm \frac{\pi}{r}\}$ (P) ✓	$\cos n \neq 0 \rightarrow n \neq \frac{\pi}{2} + k\pi$ $\sin n \neq 0 \rightarrow n \neq k\pi$ $\cos n - 1 \neq 0 \rightarrow \cos n \neq 1 \rightarrow n \neq k\pi$ $D = \mathbb{R} - \{k\pi, \frac{\pi}{2} + k\pi\}$	9
$r n - r - \frac{1}{r} > 0$ $r n - r > \frac{1}{r}$ $ n - r > \frac{1}{r^2}$ $n - r > \frac{1}{r^2} \rightarrow n > r + \frac{1}{r^2}$ $n - r < -\frac{1}{r^2} \rightarrow n < r - \frac{1}{r^2}$ (P) ✓	$(-\infty, r - \frac{1}{r^2}) \cup (r + \frac{1}{r^2}, \infty)$	9
$ n \neq 0 \rightarrow n \neq 0$ $D = \mathbb{R} - \{0\}$ (P) ✓	$r - r n \geq 0$ $+r n \leq +r \rightarrow n \leq r \rightarrow -r \leq n \leq r$ $[-r, r]$	10