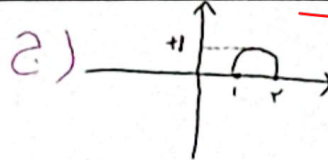
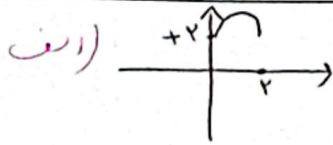
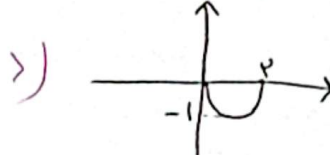


14, 5



1



الف) $n = \frac{\omega \pm \sqrt{\omega^2 - 4}}{2} = 3, 2$

$\frac{2}{+d} - \frac{3}{-d} +$ $D_f = (-\infty, 2) \cup (3, +\infty)$

ج) $\frac{-1}{(n+1)} - \frac{\omega}{(n+\omega)}$

$\frac{-\omega}{+d} - \frac{-1}{-d} +$ $D_f = [-\infty, -\omega] \cup [-1, +\infty)$

2

ب) $\frac{(n-1)(n-\omega)}{+1 + \omega}$ $D_f = (1, \omega)$

د) $\frac{(-1)(n-2)}{+d - d} +$ $D_f = [1, 2]$

الف) $\frac{(n-1)(n-2)}{+1 + 2} \rightarrow$ ریشه صورت
 $n - \omega = 0 \Rightarrow n = \omega \rightarrow$ ریشه مخرج

$\frac{1}{-d} + \frac{2}{d} - \frac{\omega}{d} +$
 $D_f = (-\infty, 1) \cup (2, \omega)$

ب) $n^2 - 1 = 0 \Rightarrow n^2 = 1 \Rightarrow n = \pm 1 \rightarrow$ ریشه صورت
 $\frac{(n-1)(n-\omega)}{+1 + \omega} \rightarrow$ ریشه مخرج

$\frac{-1}{+d} - \frac{1}{-d} - \frac{\omega}{d} +$
 $D_f = (-\infty, -1] \cup (\omega, +\infty)$

3

الف) $\frac{n^3 - 1}{n^3 - n} > 0$

$n^3 - 1 = 0 \Rightarrow n^3 = 1 \Rightarrow n = 1 \rightarrow$ ریشه صورت
 $n^3 - n = 0 \Rightarrow n(n^2 - 1) = 0 \Rightarrow n(n-1)(n+1) = 0$
 $\rightarrow$ ریشه مخرج

$\frac{-1}{+d} - \frac{0}{d} + \frac{1}{d} +$
 $D_f = (-\infty, -1) \cup (0, +\infty) - \{1\}$

ب) $\frac{n^2 - 14}{n^2 - \omega n + 4} > 0$

$n^2 - 14 = 0 \Rightarrow n^2 = 14 \Rightarrow n = \pm \sqrt{14} \rightarrow$ ریشه صورت
 $(n-1)(n-\omega) \Rightarrow +1 + 4 \rightarrow$ ریشه مخرج

$\frac{-4}{+d} - \frac{1}{-d} + \frac{4}{d} +$
 $D_f = (-\infty, -\sqrt{14}) \cup (\sqrt{14}, +\infty) - \{1, \omega\}$

4

الف) $x - n > 0 \Rightarrow n < x$
 $x - \sqrt{2-n} > 0 \Rightarrow x > \sqrt{2-n}$
 $\Rightarrow x - n < 14 \Rightarrow n > x - 14$
 $-14 < n < x$
 $D_f = [-14, x]$

ب) $n - x > 0 \Rightarrow n > x$
 $x - \sqrt{n-2} > 0$
 $\Rightarrow \sqrt{n-2} < x$
 $\Rightarrow n - 2 < x^2$
 $\Rightarrow n < x^2 + 2$
 $x < n < x^2 + 2$
 $D_f = [x, x^2 + 2]$

5

الف) $\{x - 2n^2\} \geq 0$

$2n^2 \leq 4 \Rightarrow n^2 \leq 2$

$\Rightarrow -\sqrt{2} \leq n \leq \sqrt{2}$

$D_f = [-\sqrt{2}, \sqrt{2}]$

ب) $\{x | n| - 9\} \geq 0$

$\Rightarrow 3 |n| \geq 9$

$\Rightarrow |n| \geq 3$

$\Rightarrow n \geq 3, n \leq -3$

$D_f = (-\infty, -3] \cup [3, +\infty)$



6

الف) $|n| - 3 \neq 0$

$\Rightarrow |n| \neq 3$

$\Rightarrow n \neq \pm 3$

$D_f = \mathbb{R} - \{\pm 3\}$

ب) $\sqrt{n} - 3 \neq 0$

$\Rightarrow \sqrt{n} \neq 3$

$\Rightarrow n \neq 9$

$n \geq 0$

$D_f = [0, +\infty) - \{9\}$



7

$n \neq k\pi \leftarrow \sin n \neq 0$

الف) $\{x \cos n - 1\} \neq 0$

$\Rightarrow x \cos n \neq 1 \Rightarrow \cos n \neq \frac{1}{x}$

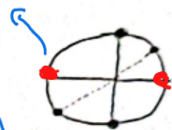
$D_f = \mathbb{R} - \{xk\pi - \frac{\pi}{4}, xk\pi + \frac{\pi}{4}\}$



ج) $\cot n - 1 \neq 0 \Rightarrow \cot n \neq 1$

$\cos n \neq 0$

$D_f = \mathbb{R} - \{k\pi + \frac{\pi}{4}, k\pi + \frac{5\pi}{4}\}$



ب) $\{x \sin n + 1\} \neq 0 \Rightarrow x \sin n \neq -1$

$\Rightarrow \sin n \neq -\frac{1}{x}$

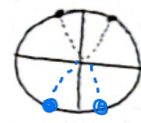
$D_f = \mathbb{R} - \{xk\pi - \frac{\pi}{4}, xk\pi - \frac{3\pi}{4}\}$



د) $\{x \sin^2 n - 3\} \neq 0 \Rightarrow \sin^2 n \neq \frac{3}{x}$

$\Rightarrow \sin n \neq \pm \sqrt{\frac{3}{x}}$

$D_f = \mathbb{R} - \{xk\pi + \frac{\pi}{4}, xk\pi - \frac{\pi}{4}\}$



$ka \pm \frac{\pi}{4}$

8

$\{x | x - 2| - \frac{1}{x}\} \geq 0$

$\{x | x - 2| \geq \frac{1}{x}\}$

$|x - 2| \geq \frac{1}{x}$

$x - 2 \geq \frac{1}{x} \Rightarrow x \geq \frac{9}{x}$

$x - 2 \leq -\frac{1}{x} \Rightarrow x \leq \frac{4}{x}$



$\Rightarrow D_f = (-\infty, \frac{4}{x}) \cup (\frac{9}{x}, +\infty)$

9

الف) $\{x - 2|n|\} \geq 0$

$\{x | n| \leq 2\}$

$|n| \leq 2$

$-2 \leq n \leq 2$

$\Rightarrow D_f = [-2, 2]$

ب) $|n| \neq 0$

$n \neq 0$

$\Rightarrow D_f = \mathbb{R} - \{0\}$



10