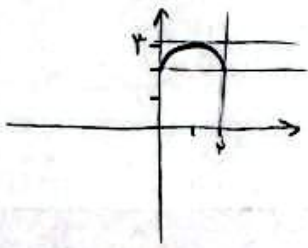
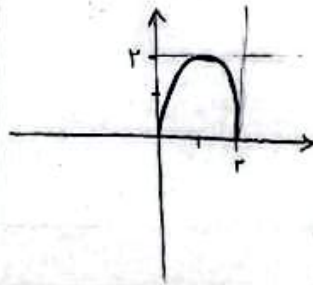


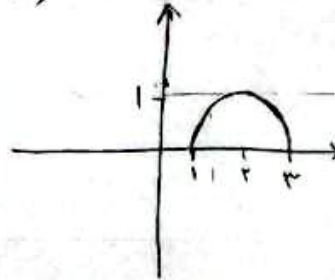
الف)



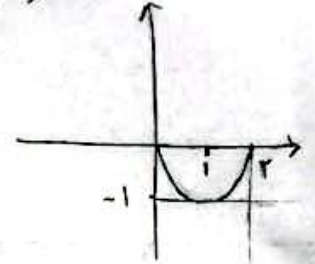
ب)



ج)



د)



الف)  $(x-1)(x-2) > 0 \rightarrow$

|     |     |     |
|-----|-----|-----|
| $x$ | $1$ | $2$ |
|     | $+$ | $-$ |
|     | $-$ | $+$ |

$D_f = (-\infty, 1) \cup (2, +\infty)$

ج)  $(n+1)(n+5) > 0$

|     |      |      |
|-----|------|------|
| $n$ | $-5$ | $-1$ |
|     | $+$  | $-$  |
|     | $-$  | $+$  |

$D_f = (-\infty, -5] \cup [-1, +\infty)$

ب)  $(n-1)(n-5) < 0$

|     |     |     |
|-----|-----|-----|
| $n$ | $1$ | $5$ |
|     | $+$ | $-$ |
|     | $-$ | $+$ |

$D_f = (1, 5)$

د)  $(n-1)(n-4) < 0$

|     |     |     |
|-----|-----|-----|
| $n$ | $1$ | $4$ |
|     | $+$ | $-$ |
|     | $-$ | $+$ |

$D_f = [1, 4]$

الف)  $\frac{(n-1)(n-2)}{(n-5)} < 0$

|     |     |     |     |
|-----|-----|-----|-----|
| $n$ | $1$ | $2$ | $5$ |
|     | $-$ | $+$ | $-$ |
|     | $+$ | $-$ | $+$ |

$D_f = (-\infty, 1) \cup (2, 5)$

$D_f = (-\infty, 1) \cup (2, 5)$

ب)  $\frac{n^2-1}{(n-1)(n-5)} \geq 0$

|     |      |     |     |
|-----|------|-----|-----|
| $n$ | $-1$ | $1$ | $5$ |
|     | $+$  | $-$ | $-$ |
|     | $-$  | $+$ | $+$ |

$D_f = (-\infty, -1] \cup (5, +\infty)$

$D_f = (-\infty, -1] \cup (5, +\infty)$

الف)  $\frac{n^3-1}{n^3-n} \geq 0 \rightarrow \frac{n^2-1}{n^2-1}$

|     |      |     |
|-----|------|-----|
| $n$ | $-1$ | $1$ |
|     | $+$  | $-$ |
|     | $-$  | $+$ |

$D_f = (-\infty, -1) \cup (0, 1) \cup (1, +\infty)$

ب)  $\frac{n^3-14}{(n-1)(n-5)} \geq 0$

|     |      |     |     |
|-----|------|-----|-----|
| $n$ | $-5$ | $1$ | $5$ |
|     | $+$  | $-$ | $+$ |
|     | $-$  | $+$ | $-$ |

$D_f = (-\infty, -5] \cup (1, 5) \cup (5, +\infty)$

$D_f = (-\infty, -5] \cup (1, 5) \cup (5, +\infty)$

الف)  $2-n > 0 \rightarrow n < 2$

$2-\sqrt{2-n} > 0 \rightarrow \sqrt{2-n} < 2 \rightarrow 2-n < 4 \rightarrow n > -2$

$D_f = [-2, 2]$

ب)  $x-2 \geq 0$

$2-\sqrt{x-2} \geq 0 \rightarrow \sqrt{x-2} \leq 2 \rightarrow x-2 \leq 4 \rightarrow x \leq 6$

$D_f = [2, 6]$

$$\text{الف) } 4 - 2n^2 > 0 \rightarrow 2n^2 < 4 \rightarrow n^2 < 2 \rightarrow -\sqrt{2} < n < \sqrt{2} \rightarrow D_f = [-\sqrt{2}, \sqrt{2}]$$

$$\text{ب) } 2|n| - 9 > 0 \rightarrow 2|n| > 9 \rightarrow |n| > \frac{9}{2} \begin{cases} n > \frac{9}{2} \\ n < -\frac{9}{2} \end{cases}$$

$$D_f = (-\infty, -\frac{9}{2}] \cup [\frac{9}{2}, +\infty)$$

$$\text{الف) } |n| - 3 \neq 0 \rightarrow |n| \neq 3 \rightarrow n \neq \pm 3$$

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

$$\text{ب) } n > 0$$

$$\sqrt{n} - 3 \neq 0 \rightarrow \sqrt{n} \neq 3 \rightarrow n \neq 9$$

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

$$\text{الف) } r \cos n - 1 \neq 0 \rightarrow \cos n \neq \frac{1}{r}$$

$$D_f = \mathbb{R} - \{rkn - \frac{\pi}{r}, rkn + \frac{\pi}{r}\}$$

$$\text{ب) } \cos n \neq 0 \rightarrow \mathbb{R} - \{km + \frac{\pi}{2}\}$$

$$c \cos n - 1 \neq 0 \rightarrow \mathbb{R} - \{km + \frac{\pi}{c}\}$$

$$D_f = \mathbb{R} - \{km + \frac{\pi}{r}, km + \frac{\pi}{c}\}$$

$$\text{ب) } r \sin n + 1 \neq 0 \rightarrow \sin n \neq -\frac{1}{r}$$

$$D_f = \mathbb{R} - \{rkn - \frac{\pi}{r}, rkn + \pi + \frac{\pi}{r}\}$$

$$\text{ب) } r \sin^2 n - 1 \neq 0 \rightarrow \sin n \neq \pm \frac{\sqrt{r}}{r}$$

$$D_f = \mathbb{R} - \{km \pm \frac{\pi}{r}\}$$

$$y = \frac{1}{\sqrt{r|n-r| - \frac{1}{r}}} \Rightarrow r|n-r| - \frac{1}{r} > 0$$

$$r|n-r| > \frac{1}{r} \rightarrow |n-r| > \frac{1}{r^2} \rightarrow \begin{cases} n-r > \frac{1}{r^2} \rightarrow n > \frac{1}{r^2} + r \\ n-r < -\frac{1}{r^2} \rightarrow n < r - \frac{1}{r^2} \end{cases}$$

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

$$\text{الف) } 4 - 2|n| > 0 \rightarrow 2|n| < 4 \rightarrow |n| < 2 \rightarrow -2 < n < 2$$

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

$$\text{ب) } \frac{\sqrt{|n|}}{\sqrt{|n|}} = \frac{|n| > 0}{|n| > 0} \rightarrow \begin{cases} n > 0 \\ n < 0 \end{cases} \quad D_f = \mathbb{R} - \{0\}$$