

عبارت درجه اول است، یعنی به فرم $ax+b$ و $a=2$
 $\sqrt{2x+b} \rightarrow x \mid - \frac{3}{b} + \rightarrow x=3 \quad (2)3+b=0 \quad b=-6$

1

داده R است، پس عبارت = هواره ناقصه
 $0 \leq \rightarrow (2)^2 - 4(1-m^2) \geq 0 \rightarrow 4-4+4m^2 \geq 0 \rightarrow m^2 \geq 1$
 $-1 \leq m \leq 1 \rightarrow m \text{ حاکل} - m \text{ حاکل} = 1 - (-1) = 2$

2

$[x] + [-x] + 1 \begin{cases} \rightarrow x \in \mathbb{Z} \rightarrow [x] + [-x] + 1 = 1 \quad \checkmark \\ \rightarrow x \notin \mathbb{Z} \rightarrow [x] + [-x] + 1 = 0 \quad \times \end{cases}$
 $x \in \mathbb{Z} \rightarrow [x] + [-x] + 1 = 1 \quad \checkmark$
 $x \notin \mathbb{Z} \rightarrow [x] + [-x] + 1 = 0 \quad \times$
 $x \in \mathbb{Z} \rightarrow -2 \leq x \leq 2 \quad D_y = \{-2, -1, 0, 1, 2\} \quad (5)$

3

الف $\sqrt{x^2(x+3)} \geq 0 \quad \begin{matrix} -3 & 0 & 3 \\ | & | & | \\ - & + & + \end{matrix} \quad D_y = [-3, \infty)$
 ب $y = \frac{(x+1)(x-1)(x^2)(x-3)}{(x-1)(x^2+x+1)} \geq 0 \quad \begin{matrix} -1 & 0 & 3 \\ | & | & | \\ + & - & - \end{matrix} \quad D_y = (-\infty, -1] \cup [3, \infty) \cup \{0\}$

4

$|x-2|-3 \geq 0 \rightarrow \begin{cases} x \geq 5 \\ x \leq -1 \end{cases} \quad D_y = (-\infty, -1] \cup [5, \infty)$

5

$|x-2| \geq 0 \rightarrow 0 \leq x-2 \leq 4 \rightarrow -2 \leq x \leq 6 \rightarrow D_y = [-2, 6]$

$$1 - x|x| > 0 \Rightarrow x < 1 \rightarrow D_f = (-\infty, 1]$$

$$3 - |x - \omega| > 0 \rightarrow |x - \omega| < 3 \rightarrow -3 < x - \omega < 3 \rightarrow x < \omega + 3$$

$$\sqrt{3 - |x - \omega|} = 1 \Leftrightarrow 3 - |x - \omega| \neq 1 \rightarrow |x - \omega| \neq 2 \rightarrow x \neq \omega + 2, \omega - 2$$

$$D_f = [x, \omega + 3) \cup (\omega - 3, x) \cup (\omega + 2, \omega + 3) \cup (\omega - 3, \omega - 2) \subseteq [x, \omega + 3] - \{\omega + 2, \omega - 2\}$$

$$a) \cos x \neq 0 \quad D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{2} \right\}$$

$$b) \cos x \neq 1 \quad \cos x \neq \frac{1}{\sqrt{2}} \quad D_f = \mathbb{R} - \left\{ k\pi \pm \frac{\pi}{4} \right\}$$

$$a) |x+1| = |x+3| = 0 \rightarrow |x+1| = |x+3| \xrightarrow{x^2} x^2 + x + 1 = x^2 + 3x + 9$$

$$\rightarrow x^2 - 2x - 8 = 0 \xrightarrow{\text{نوسه}} (x-4)(x+2) = 0 \rightarrow x = \frac{4}{1}, \frac{-2}{1} \rightarrow D_f = \mathbb{R} - \left\{ \frac{4}{1}, \frac{-2}{1} \right\}$$

$$b) |x+1| = |x+3| > 0 \rightarrow |x+1| > |x+3| \xrightarrow{x^2} x^2 + x + 1 > x^2 + 3x + 9$$

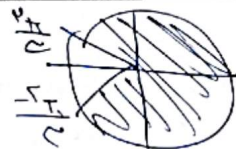
$$x^2 - 2x - 8 > 0 \quad \frac{-\frac{1}{2}}{+b} \quad \frac{1}{-b} \rightarrow D_f = (-\infty, -\frac{1}{2}] \cup [1, \infty)$$

$$x-1 > 0 \Rightarrow x > \frac{1}{1}$$

$$\lim_{x \rightarrow 0} x-1 > 0 \Rightarrow x-1 > 0 \rightarrow x > 1$$

$$\lim_{x \rightarrow \frac{1}{1}} \lim_{x \rightarrow 0} (x-1) > 0 \Rightarrow x-1 > 0 \rightarrow x < 1 \rightarrow D_f = (1, \infty]$$

$$2 \cos x + 1 > 0 \rightarrow D_f = (2k\pi - \frac{2\pi}{3}, 2k\pi + \frac{2\pi}{3})$$



$$\frac{x-1}{x+1} > 0 \Rightarrow x > 1, x < -1 \rightarrow (-\infty, -1) \cup (1, \infty)$$

$$\lim_{x \rightarrow 1} \frac{x-1}{x+1} > 0 \Rightarrow \frac{x-1}{x+1} > 1 \rightarrow \lim_{x \rightarrow 1} \frac{x}{x+1} + \frac{-1}{x-1} \rightarrow D_f = (-\infty, -1)$$