

چون جواب یک بازه است پس باید قاعده
باشه و درجه ۲ نداشته باشه

$$a=2 \quad \boxed{b=-5}$$

$$f(x) = \sqrt{(a-2)x^2 + ax + b}$$

$$2a+b=0 \quad a=2 \quad \Rightarrow \quad 4+b=0 \quad \Rightarrow \quad \boxed{b=-4}$$

$$f(x) = \sqrt{x^2 + 2x + 2 - m^2}$$

$$x^2 + 2x + 2 - m^2 \geq 0 \quad (x+1)^2 + 1 - m^2 \geq 0$$

$$1 - m^2 \geq 0 \quad 1 - (-1) = \boxed{2}$$

$$-1 \leq m \leq 1$$

$$f(x) = \frac{\sqrt{4-x^2}}{[x]+[-x]+1}$$

$$-2 \leq x \leq 2 \quad \Rightarrow \quad -2, -1, 0, 1, 2 \quad \boxed{\text{اعداد صحیح}}$$

آنچه غیر صحیح باشد
 $[x]+[-x]=1$ ✗
 پس مخرج منفی نشود

$$y = \sqrt{x^3 + 3x^2} \quad x^2(x+3) \geq 0 \quad D = [-3, +\infty)$$

همواره مثبت $\Rightarrow x+3 \geq 0$

$$y = \sqrt{\frac{(x^2-1)(x^3-3x^2)}{x^3-1}} \quad \frac{(x-1)(x+1)x^2(x-3)}{(x-1)(x^2+x+1)} \geq 0 \quad D = (-\infty, -1] \cup \{0\} \cup [3, +\infty)$$

برای سهولت
 $\frac{-1}{+1} \frac{1}{-1} \frac{3}{+1}$
 منفی شود

$$y = \sqrt{|x-2|-3} \quad |x-2|-3 \geq 0 \quad |x-2| \geq 3$$

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

$x \leq -1$
 $x \geq 5$

$$y = \sqrt{4-|2-x|}$$

$$4-|2-x| \geq 0$$

$$|2-x| \leq 4$$

$$D = [-2, 6]$$

(الف) $-n|n| \geq 0$ $|n| = -n$ $n < 0$ $|n| = n$ $n \geq 0$ $D = (-\infty, 1]$
 $1 - n(-n) = n^2 \geq 0$ $-n^2 \geq 0$ $n = 0$
 $1 + n \geq 0$

(ب) $D = [2, 3) \cup (3, 4) \cup (4, 5]$
 $3 - |n - 2| \geq 0$ $\sqrt{3 - |n - 2|} - 1 \neq 0$
 $|n - 2| \leq 3$ $2 \leq n \leq 5$ $3 - |n - 2| \neq 1$ $n \neq 3$
 $|n - 2| \neq 2$ $n \neq 4$

(الف) $y = \frac{\sin^2 x - 1}{\cos x}$ $\cos x \neq 0$ $D = \mathbb{R} - \left\{ \frac{\pi}{2} + k\pi \mid k \in \mathbb{Z} \right\}$

(ب) $D = \mathbb{R} - \left\{ 2k\pi \pm \frac{\pi}{2} \mid k \in \mathbb{Z} \right\}$
 $y = \frac{\cos x}{2 \cos x - 1}$ $2 \cos x - 1 \neq 0$
 $2 \cos x \neq 1$
 $\cos x \neq \frac{1}{2}$

(الف) $|2n+1| \neq |n+3|$ $(2n+1)^2 \neq (n+3)^2$ $D = \mathbb{R} - \left\{ -\frac{4}{3}, 2 \right\}$
 $2n+1 \neq n+3 \Rightarrow n \neq 2$ $2n+1 \neq -(n+3) \Rightarrow n \neq -\frac{4}{3}$

(ب) $|2n+1| \geq |n+3|$ $(2n+1)(n-2) \geq 0$ $D = (-\infty, -\frac{4}{3}] \cup [2, +\infty)$
 $(2n+1)^2 \geq (n+3)^2$ $4n^2 - 1 \geq 0$ $(2n-1)(2n+1) \geq 0$
 $2n-1 \geq 0$ $2n+1 \geq 0$ $2n-1 \leq 0$ $2n+1 \leq 0$
 $n \geq \frac{1}{2}$ $n \geq -\frac{1}{2}$ $n \leq \frac{1}{2}$ $n \leq -\frac{1}{2}$

$\log_{10}^{2n-1} \leq 1 \Rightarrow 2n-1 \leq 10 \Rightarrow n \leq 5$
 $\log_{10}^{2n-1} > 0 \Rightarrow 2n-1 > 1 \Rightarrow n > 1$
 $\log_{10}^{10} \geq 0$
 $0 < 0.1 < 1 \Rightarrow 0 < \log_{10}^{(2n-1)} \leq 1$ $D = (1, 5]$

(الف) $2 \cos x + 1 > 0$ $\cos x > -\frac{1}{2}$
 $D = \left\{ \left(-\frac{\pi}{3} + 2k\pi, \frac{\pi}{3} + 2k\pi \right) \mid k \in \mathbb{Z} \right\}$

(ب) $\log_{10} \frac{n-1}{n+1} \geq 0$

$\frac{n-1}{n+1} \geq 1$ $\frac{-2}{n+1} \geq 0$ $n+1 < 0$
 $D = (-\infty, -1)$