

$$(a-r)x^2 + ax + b$$

$$a-r=0 \rightarrow a=r$$

$$r(x+b) > 0 \rightarrow x > -b/r$$

$$-b/r = r \rightarrow b = -r^2$$

✓

۱۹/۲۵ آفرین

$$f(x) = (x^2 + rx + r - m^2) \rightarrow x^2 + rx + r - m^2 \geq 0 \rightarrow \Delta \leq 0 \rightarrow \Delta = r^2 - 4(1)(r - m^2) = r^2 - 4r + 4m^2 = (r-2)^2 + 4m^2 - 4$$

$$4m^2 - 4 \leq 0$$

$$m^2 \leq 1$$

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

$$\max(m) - \min(m) = 1 - (-1) = 2$$

✓

$$\frac{\sqrt{\epsilon - x^2}}{[x] + [-x] + 1}$$

$$\epsilon - x^2 \geq 0 \rightarrow -\sqrt{\epsilon} \leq x \leq \sqrt{\epsilon}$$

$$[x] + [-x] = 0 \rightarrow \{-1, 0, 1\}$$

$$\rightarrow \text{if } x \in \mathbb{Z}$$

✓

$$\sqrt{x^2 + rx} = \sqrt{(x^2)(x+r)}$$

$$x^2 \geq 0$$

$$(x+r) \geq 0$$

$$\rightarrow D: [-r, +\infty)$$

همواره مثبت باد

$$D: (-\infty, -1] \cup \{0\} \cup [r, +\infty)$$

$$\sqrt{(x^2-1)(x^2-rx^2)} \rightarrow (x-1)(x+1) \times x^2(x-r) \geq 0 \rightarrow (x+1)(x-r) \geq 0 \rightarrow x \leq -1 \text{ or } x \geq r$$

$$x^2-1 \rightarrow (x-1)(x+1) \rightarrow x \neq 1$$

$$\text{الف) } y = \sqrt{|x-2|} - 2 \rightarrow |x-2| \geq 4 \rightarrow x \geq 6 \text{ or } x \leq -2$$

$$D: (-\infty, -2] \cup [6, +\infty)$$

✓

$$\text{ب) } \sqrt{\epsilon - |2-x|} \rightarrow |2-x| \leq \epsilon \rightarrow -\epsilon \leq x-2 \leq \epsilon \rightarrow D: [2-\epsilon, 2+\epsilon]$$

$$y = \sqrt{1-x|x|} \rightarrow x|x| \leq 1 \xrightarrow{x \geq 0} x^2 \leq 1 \rightarrow 0 \leq x \leq 1$$

$$x < 0 \rightarrow -x^2 \leq 0 < 1 \rightarrow \checkmark$$

$$D: (-\infty, 1]$$

صورت سوال را استنباط نوشتی!

$$(1, 25)$$

$$ب) \frac{1}{\sqrt{x-|x-1|}} \rightarrow \sqrt{x-|x-1|} > 0$$

$$\rightarrow |x-1| < x \rightarrow D: (1, \infty)$$

$$y = \frac{\sin^2 x - 1}{\cos x} \rightarrow \cos x \neq 0 \rightarrow D: x \neq \frac{\pi}{2} + k\pi$$

$$ب) y = \frac{\cos x}{x \cos x - 1} \rightarrow \cos x \neq \frac{1}{x} \rightarrow D: x \neq \pm \frac{\pi}{2} + 2k\pi$$

$$الف) y = \frac{x+3}{|x+1|-|x+2|} \rightarrow |x+1| \neq |x+2| \rightarrow (x+1)^2 - (x+2)^2 \neq 0 \rightarrow (x-2)(x+3) \neq 0 \rightarrow x \neq 2, x \neq -3$$

$$D: x \neq 2, x \neq -3$$

$$ب) y = \sqrt{|2x+1|-|x-3|} \rightarrow |2x+1| \geq |x-3|$$

$$D: (-\infty, -\frac{4}{3}] \cup [2, \infty)$$

$$f(x) = \sqrt[3]{\log_{10}(\log_{10}(2x-1))} \rightarrow \log_{10}(\log_{10}(2x-1)) \geq 0 \rightarrow \log_{10}(2x-1) \geq 1 \rightarrow 2x-1 \geq 10 \rightarrow x \geq 5.5$$

$$\log_{10}(2x-1) \leq 1 \rightarrow 2x-1 \leq 10 = 10^1 \rightarrow x \leq 5.5$$

$$D: (5.5, \infty)$$

$$الف) \log(e^{\cos x} + 1) \rightarrow e^{\cos x} + 1 > 0 \rightarrow \cos x > -1 \rightarrow D: x \in (-\frac{\pi}{2}, \frac{\pi}{2}) + 2k\pi$$

$$ب) y = \sqrt{\log \frac{x-1}{x+1}} \rightarrow \frac{x-1}{x+1} > 0 \rightarrow x < -1 \text{ or } x > 1 \rightarrow D: (-\infty, -1) \cup (1, \infty)$$

$$\log \frac{x-1}{x+1} \geq 0 \rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1}{x+1} - 1 \geq 0$$

$$\frac{(x-1)-(x+1)}{x+1} \geq 0 \rightarrow \frac{-2}{x+1} \geq 0 \rightarrow x+1 < 0 \rightarrow x < -1$$

$$4- \text{ب) } 3 - |n-2| \geq 0 \rightarrow |n-2| \leq 3 \rightarrow -3 \leq n-2 \leq 3 \rightarrow 2 \leq n \leq 5$$

$$\sqrt{3 - |n-2|} - 1 \neq 0 \rightarrow \sqrt{3 - |n-2|} \neq 1 \rightarrow 3 - |n-2| \neq 2 \rightarrow |n-2| \neq 1 \rightarrow n \neq 1, 3$$

$$D_f = [2, 5] - \{1, 3\} = [2, 3) \cup (3, 5]$$