

Subject:

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B: یازدهم دختر

Name...

حوا کبریایی زاده

$$f(x) = \sqrt{(a-x)x^2 + ax + b} \quad Df = [3, +\infty)$$

(سوال 1)

$$\frac{r}{-p} + \Delta = 0 \rightarrow a^2 - f(a-r)(b) = a^2 - fab + ab = 0$$

$$\xrightarrow{n=r} (a-r)r + ra + b = 12a + b = 11 \rightarrow (12 \times \frac{12}{\sqrt{}}) + b = 11$$

$$b = -\frac{144}{\sqrt{}} + \frac{12}{\sqrt{}} = \boxed{-\frac{132}{\sqrt{}}}$$

$$\frac{-a \pm \sqrt{\Delta}}{2(a-r)} = \frac{-a}{2a-r} = r \rightarrow a = \frac{12}{\sqrt{}}$$

(سوال 2)

$$f(x) = \sqrt{x^2 + 2x + 2 - m^2} \geq 0 \quad Df = \mathbb{R}$$

$$\Delta \leq 0 \rightarrow b^2 - f(a)(c) \rightarrow f - f(r-m^2)(1) = f - 1 + fm^2$$

$$fm^2 - f \leq 0 \rightarrow fm^2 \leq f \quad -2 \leq 2m \leq 2 \rightarrow -1 \leq m \leq 1$$

$$1 - (-1) = 2$$

(سوال 3)

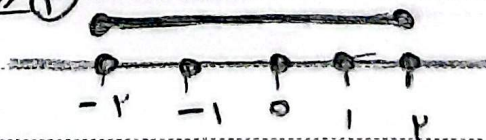
$$f(m) = \sqrt{f - m^2} \geq 0$$

$$f - m^2 \geq 0 \rightarrow f \geq m^2 \rightarrow$$

$$[n] + [-n] + 1 \neq 0$$

$$2 \geq m \geq -2 \quad (1)$$

$$[n] + [-n] \neq -1 \rightarrow n \in \mathbb{Z} \setminus \{0\}$$



① و ②

$$\rightarrow Df = [-2, 2]$$

(مجموعه جواب)

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سوال 4

الف) $y = \sqrt{x^3 + 3x^2}$

$$x^2(x+3) \geq 0 \rightarrow x = 0, -3$$

+∞ ← → -∞

$$\begin{array}{c} -3 \quad 0 \\ - \quad | \quad + \quad | \quad + \end{array}$$

$$Df = [-3, +\infty)$$

ب) $\sqrt{\frac{(x^2-1)(x^3-3x^2)}{x^3-1}} \geq 0 \rightarrow \frac{(x^2-1)(x^3-3x^2)}{x^3-1} \geq 0$

1 ← → ∞ + 3

$$\frac{(x^2-1)x^2(x-3)}{x^3-1} \geq 0 \rightarrow x = -1, 0, 3$$

$$\begin{array}{c} -1 \quad 0 \quad 1 \quad 3 \\ + \quad - \quad - \quad + \quad - \quad + \end{array}$$

$$Df = (-\infty, -1] \cup [3, +\infty)$$

سوال 5

الف) $y = \sqrt{|x-2|-3}$

$$|x-2| \geq 3 \quad x-2 \geq 3 \rightarrow x \geq 5$$

↓

$$-3 \geq x-2$$

$$x \leq -1$$

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

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$$ب) y = \sqrt{x - |x - 2|} \quad x \geq |x - 2|$$

$$x \geq x - 2 \geq -x \rightarrow 4 \geq x \geq -2$$

$$Df = [-2, 4]$$

سوال 6:

$$ج) y = \sqrt{1 - x|x|}$$

$$1 - x|x| \geq 0 \xrightarrow{x \geq 0} 1 - x^2 \geq 0 \rightarrow x^2 \leq 1 \rightarrow -1 \leq x \leq 1 \quad (I)$$

$$\xrightarrow{x < 0} 1 + x^2 \geq 0 \rightarrow 1 + x^2 > 0 \quad \text{دائمًا} \quad (II)$$

$$(I) \cap (II) \rightarrow Df = [-1, 1]$$

$$د) y = \frac{1}{\sqrt{4 - |x - 2| - 1}}$$

$$4 - |x - 2| - 1 > 0 \rightarrow |x - 2| < 3 \rightarrow -2 < x - 2 < 2$$

$$\rightarrow 0 < x < 4 \rightarrow Df = (0, 4)$$

$$\text{الف) } y = \frac{\sin^p x - 1}{\cos x}$$

(V) سوال

$$\cos x \neq 0 \rightarrow x \neq K\pi + \frac{\pi}{2}$$

$$Df = \mathbb{R} - \left\{ K\pi + \frac{\pi}{2} \right\}$$

$$\text{ب) } y = \frac{\cos x}{2\cos x - 1}$$

$$2\cos x - 1 \neq 0 \rightarrow \cos x \neq \frac{1}{2} \rightarrow \cos x \neq \frac{1}{2} \rightarrow x \neq 2K\pi \pm \frac{\pi}{3}$$

$$\text{⊗ } D = \mathbb{R} - \left\{ 2K\pi \pm \frac{\pi}{3} \right\}$$

(A) سوال

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

$$|2x+1| - |x+p| \neq 0 \rightarrow 4x^2 + 4x + 1 - x^2 - 2xp - p^2 \neq 0 \rightarrow 3x^2 + 4x - 2xp - p^2 + 1 \neq 0$$

$$\rightarrow 3x^2 - 2px - 2p^2 + 1 = 0 \rightarrow (x-p)(x+p) = 0 \rightarrow x = p, -\frac{p}{3}$$

$$Df = \mathbb{R} - \left\{ p, -\frac{p}{3} \right\}$$

$$\text{ب) } y = \sqrt{|2x+1| - |x+p|} \rightarrow |2x+1| - |x+p| \geq 0 \rightarrow$$

$$(2x+1)^2 - (x+p)^2 \geq 0 \rightarrow 3x^2 + 4x - 2xp - p^2 + 1 \geq 0 \rightarrow 3x^2 - 2px - 2p^2 + 1 \geq 0$$

$$\rightarrow (x-p)(x+p) \geq 0 \rightarrow x = p, -\frac{p}{3}$$

$$Df = (-\infty, -\frac{p}{3}] \cup [p, +\infty)$$

$$\text{الف) } y = \frac{\sin^p x - 1}{\cos x}$$

(VC) low

$$\cos x \neq 0 \rightarrow x \neq K\pi + \frac{\pi}{2}$$

$$D_f = \mathbb{R} - \left\{ K\pi, \frac{\pi}{2} \right\}$$

$$\text{ب) } y = \frac{\cos x}{2\cos x - 1}$$

$$2\cos x - 1 \neq 0 \rightarrow \cos x \neq \frac{1}{2} \rightarrow \cos x \neq \frac{1}{2} \rightarrow x \neq 2K\pi \pm \frac{\pi}{3}$$

$$\text{⊗ } D = \mathbb{R} - \left\{ 2K\pi \pm \frac{\pi}{3} \right\}$$

(A) low

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

$$|2x+1| - |x+p| \neq 0 \rightarrow (2x+1)^2 - (x+p)^2 \neq 0 \rightarrow 4x^2 + 4x + 1 - x^2 - 2px - p^2 \neq 0 \rightarrow 3x^2 + (4-2p)x + (1-p^2) \neq 0$$

$$\rightarrow 3x^2 - 2px - 2p = 0 \rightarrow (x-2)(x+p) = 0 \rightarrow x = 2, -\frac{p}{2}$$

$$D_f = \mathbb{R} - \left\{ 2, -\frac{p}{2} \right\}$$

$$\text{ب) } y = \sqrt{|2x+1| - |x+p|} \rightarrow |2x+1| - |x+p| \geq 0 \rightarrow$$

$$(2x+1)^2 - (x+p)^2 \geq 0 \rightarrow 3x^2 - 2px - 2p \geq 0 \rightarrow 3x^2 - 2px - 2p \geq 0$$

$$\rightarrow (x-2)(x+p) \geq 0 \rightarrow x = 2, -\frac{p}{2}$$

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

سوال (9)

$$\log^{(r-1)} > 0 \rightarrow r-1 > 1 \rightarrow r > 2 \rightarrow n > 1 \text{ (II)}$$

$$\text{I} \cap \text{II} \cap \text{III} \rightarrow \text{Df}_5(193)$$

How

$$\gamma \cos \alpha > -1 \rightarrow \cos \alpha > \frac{-1}{\gamma} \rightarrow D_f = \left(\gamma K\pi - \frac{\pi}{\gamma}, \gamma K\pi + \frac{\pi}{\gamma} \right)$$

$$\frac{n-1-(n+1)}{n+1} \geq 0 \rightarrow \frac{-2}{n+1} \geq 0 \rightarrow n+1 \leq 0 \rightarrow n \leq -1 \quad (1)$$

$$\rightarrow \frac{x-1}{x+1} > 0 \rightarrow + \frac{-1}{x+1} \text{ (v)} \xrightarrow{\text{① ②}} D_f = (-\infty, -1)$$

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