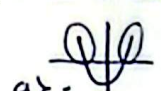


رشته عبارت $\sqrt{(a-2)x^2+ax+b}$ $[3, +\infty)$

$$a-2=0 \Rightarrow a=2 \quad \sqrt{2x+b} \Rightarrow 2x^3+b=0 \Rightarrow b=-6 \quad \checkmark$$

نکته * : هیچ عبارت درجه ای تحت مشتق به این صورت نیست . به صورت Δ و $\square$ و $\cup$ و $\cap$

صورت $[\square, \Delta]$ در می آید

$a < 0$  

نکته * در صورتی عبارت درجه ای همواره بزرگتر یا مساوی صفر است ، دلای آن کوچکتر یا مساوی صفر باشد.

$$\sqrt{x^2+2x+2-m^2} \geq 0$$

$$\Delta = 4 - 4(2-m^2) = 4 - 8 + 4m^2 = 4m^2 - 4 \leq 0 \Rightarrow m^2 - 1 \leq 0$$

$$\frac{-1}{+} \frac{+1}{-} \Rightarrow [-1, 1] \quad \text{تفاضل بزرگترین و کوچکترین}$$

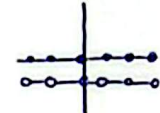
$$1 - (-1) = 2 \quad \checkmark$$

$$\sqrt{4-x^2} \geq 0 \Rightarrow \frac{\sqrt{(2-x)(2+x)}}{x \text{ های عضو } \mathbb{Z}}$$

نقطه قابل تبدیل است

$[-2, 2] \cap \{\dots, -1, 0, 1, \dots\}$

$\{-2, -1, 0, 1, 2\}$ $\checkmark$



$$y_2 \sqrt{x^3+3x^2} \geq 0 \quad x^2(x+3) \geq 0 \quad \frac{-3}{-} \frac{0}{+} \frac{+}{+} \rightarrow [-3, +\infty) \quad \checkmark$$

$$y_2 \sqrt{\frac{(x^2-1)(x^2-3x^2)}{x^3-1}} \geq 0 \rightarrow \frac{(x-1)(x+1)(x^2)(x-3)}{(x-1)(x^2+x+1)} \rightarrow \frac{-1}{+} \frac{0}{-} \frac{1}{-} \frac{3}{-} \frac{+}{+}$$

$$(-\infty, -1] \cup \{0\} \cup [3, +\infty) \quad \checkmark$$

الف $y_2 \sqrt{|x-2|-4} \geq 0 \rightarrow |x-2| \geq 4 \rightarrow x-2 \geq 4, x-2 \leq -4$

$$x \geq 6, x \leq -1 \Rightarrow (-\infty, -1] \cup [6, +\infty) \quad \checkmark$$

ب $y_2 \sqrt{4-12-x} \geq 0 \rightarrow 12-x \leq 4 \rightarrow -2 \leq 2-x \leq 4 \rightarrow -2 \leq x \leq 4$

$$[-2, 4] \quad \checkmark$$

$$y: \sqrt{1-x|x|} \geq 0 \rightarrow x|x| \leq 1 \rightarrow (-\infty, 1] \checkmark \quad \text{(الف)}$$

$$y: \frac{1}{\sqrt{r-|x-a|}-1} \quad r-|x-a| \geq 0 \rightarrow |x-a| \leq r \rightarrow -r \leq x-a \leq r \rightarrow \boxed{-r \leq x \leq a+r}$$

$$r-|x-a| \neq 1 \rightarrow |x-a| \neq r \rightarrow \boxed{x \neq r, -r} \rightarrow \boxed{[-r, r] - \{r, -r\}} \checkmark$$

$$y: \frac{\sin^2 x - 1}{\cos x} \rightarrow \cos x \neq 0 \quad \text{Unit Circle} \rightarrow \boxed{\mathbb{R} - \{k\pi + \frac{\pi}{2}\}} \checkmark \quad \text{(الف)}$$

$$y: \frac{\cos x}{r \cos x - 1} \rightarrow r \cos x - 1 \neq 0 \rightarrow \cos x \neq \frac{1}{r} \quad \text{Unit Circle}$$

$$\boxed{\mathbb{R} - \{r k \pi \pm \frac{\pi}{r}\}} \checkmark$$

$$y: \sqrt{r \sin x - 1} \geq 0 \rightarrow \sin x \geq \frac{1}{r} \quad \text{Unit Circle} \rightarrow \boxed{[r k \pi + \frac{\pi}{r}, r k \pi + \frac{5\pi}{r}]} \checkmark \quad \text{(الف)}$$

$$y: \sqrt{1 - r \cos x} \geq 0 \rightarrow \cos x \leq \frac{1}{r} \quad \text{Unit Circle}$$

$$\boxed{[r k \pi + \frac{\pi}{r}, r k \pi - \frac{\pi}{r}] \cup \mathbb{R} - (r k \pi - \frac{\pi}{r}, r k \pi + \frac{\pi}{r})} \checkmark$$

$$\sqrt{\log_{\frac{1}{a}} \log_{\frac{1}{a}} (x-1)} \rightarrow x-1 > 0 \rightarrow \boxed{x > 1}$$

$$\log_{\frac{1}{a}} (x-1) > 0 \rightarrow x-1 > 1 \rightarrow \boxed{x > 2} \quad \text{استدراك} \rightarrow \boxed{(1, 2)} \checkmark$$

$$\log_{\frac{1}{a}} \log_{\frac{1}{a}} (x-1) > 0 \rightarrow \log_{\frac{1}{a}} (x-1) < 1 \rightarrow x-1 < a \rightarrow \boxed{x < a+1}$$

$$\log(r \cos x + 1) \rightarrow r \cos x + 1 > 0 \rightarrow \cos x > -\frac{1}{r} \rightarrow \text{Unit Circle}$$

$$\boxed{\mathbb{R} - [r k \pi - \frac{\pi}{r}, r k \pi + \frac{\pi}{r}]} \checkmark \quad \text{(الف)}$$

$$\sqrt{\log \frac{x-1}{x+1}} \quad \frac{x-1}{x+1} > 0 \rightarrow \frac{-1}{+3} < \frac{-1}{-1} \rightarrow \boxed{(-\infty, -1) \cup [1, +\infty)}$$

$$\log_{\frac{1}{a}} \frac{x-1}{x+1} \geq 0 \rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1-x-1}{x+1} \geq 0 \rightarrow \frac{-2}{x+1} \geq 0 \rightarrow \boxed{(-\infty, -1)} \quad \text{استدراك}$$

$$\boxed{(-\infty, -1)} \checkmark$$