لطفا تمیزتر بنویس

Subject
Date : Year: Month: Day: ۱۸

هستی سبزعلی دهم

1

الف) $y=\frac{\sin x - 2}{2\cos x + 1}$ $\quad 2\cos x \neq -1 \quad \cos x \neq -\frac{1}{2} \quad x \neq \pm\frac{2\pi}{3}$

$Df = \mathbb{R} - \{2k\pi \pm \frac{2\pi}{3}\}$ ۲ ✓

مخرج $\neq 0$

ب) $y=\frac{\sin x + 3}{\cos x - 1} \rightarrow \cos x \neq 1 \quad x \neq 2k\pi \quad Df = \mathbb{R} - \{2k\pi\}$

2

الف) $\frac{2\sin x + 1}{\tan x + 1}$ $\quad \tan x + 1 \neq 0 \quad \tan x \neq -1 \quad x \neq -\frac{\pi}{4}$

$\cos x = 0 \quad x = \frac{\pi}{2}$ زمانی $\tan x$ تعریف ندارد که

$Df = \mathbb{R} - \{k\pi + \frac{\pi}{2}, -\frac{\pi}{4} + k\pi\}$

زمانی $\cot x$ تعریف ندارد که

ب) $\frac{\cos x + 1}{\cot x - 1}$ ۲ ✓ $\quad \sin x = 0 \quad x = 2k\pi / k\pi$

$\cot x \neq 1 \quad x \neq \frac{\pi}{4} \quad Df = \mathbb{R} - \{k\pi, \frac{\pi}{4} + k\pi\}$

3

الف) $\sin y = x^2 - 2 \quad -1 \leq x^2 - 2 \leq 1 \quad 1 \leq x^2 \leq 3 \rightarrow 1 \leq x \leq \sqrt{3}$

$-\sqrt{3} \leq x \leq -1$

$Df = [1, \sqrt{3}] \cup [-\sqrt{3}, -1]$ ۱٫۵ ✓

ب) $y = \arccos(\sqrt{x} - 3) \quad -1 \leq \sqrt{x} - 3 \leq 1 \quad 2 \leq \sqrt{x} \leq 4$

$4 \leq x \leq 16 \quad Df = [4, 16] \quad x \geq 0 \quad Df = [4, 16]$

4

الف) $\cos y = |x| - 3 \quad Df = [-4, -2] \cup [2, 4]$

$-1 \leq |x| - 3 \leq +1$ به هر طرف ۳ تا اضافه می‌کنیم $\quad 2 \leq |x| \leq 4$ ۲ ✓

$Df = [-3, -2] \cup [-1, 0]$

$(-\infty, -2] \cup [-1, \infty)$

ب) $y = \arcsin(x^2 + 3x + 1) \rightarrow x^2 + 3x + 1 \geq -1 \quad / \quad x^2 + 3x + 1$

$-2, -1 \leftarrow (x+1)(x+2) \quad / \quad x^2 + 3x + 1 \leq 1 \quad -3 \leq x \leq 0 \quad x(x+3) \leq 0$

5

$y = \log_3 (x^2 - 4) \quad x^2 - 4 > 0 \quad x^2 > 4 \quad x > \pm 2$ یا $x < -2$

$3 > 0$ و $\quad Df = (2, \infty) \cup (-\infty, -2)$

$2 - |x| > 0 \quad |x| < 2$

$y = \log_2 (2 - |x|)$ ۱٫۵ ✓ $\quad 2 > x > -2 \quad Df = (-2, 2)$

parsian

$a-x>0 \rightarrow a>x$

$x-\mu>0 \rightarrow x>0$

Subject

Date : Year: $x-$ Month $\neq 1$ Day: $x \neq \varepsilon$

$y=\log_{x-\mu}^{a-x}$ $\cos x+1\neq 0$ $\cos x\neq -1$ $x\neq \pm\pi$ 6

$Df=\mathbb{R}-\{\}$ (μ,a) $Df=(\mu,a)-\{\varepsilon\}$

$y=\log_{x+\mu}^{x^{\mu}-1}$ $x^{\mu}-1>0$ $x^{\mu}>1$ $|x|>1$ $Df=(\infty,1]$

$a>1,\ a<-1$

$x+\mu>0 \rightarrow x>-\mu$ $x+\mu\neq 1$ $x\neq -\mu$

$Df:(-\infty,-1)\cup(1,+\infty)-\{-\mu\}$ $x=1$ $x=\mu$

$y=\log \dfrac{x^{\mu}-\varepsilon x+\mu}{x-\mu}$ $\dfrac{(x\neq 1)(x-\mu)}{(\mu\neq 1,3)\cup(\mu,+\infty)}$

$x-\mu$ | $-$ | $+$ | $+$

$x=\mu$

باید حالت بگیریم $\dfrac{x+\mu}{x-\mu}<0$ $x+\mu<0 \Rightarrow x<-\mu$ $x+\mu>0$ $x>-\mu$

$y=\log \dfrac{x+\mu}{x-\mu}$ $x-\mu<0$ $x<\mu$ $x-\mu>0 \Rightarrow x>\mu$

$x+a$ $x+a>0$ $x>-a$

$x+a\neq 1 \rightarrow x\neq -\varepsilon$ $Df=(+\mu,+\infty)\cup$

$y=\sqrt{\mu-\log_{\mu}^{(x-\mu)}}$ $x-\mu>0 \rightarrow x>\mu$ $(-\mu,+\mu)\cup(-a,\mu)$

$\mu-\log_{\mu}(x-\mu)\geq 0$ $\log_{\mu}^{x-\mu}\leq \mu$ $f:(\mu,10]$

$y=\log_{\mu}(\mu\log_{\mu}^{x}\geq 1)$ $x-\mu\leq 1$ $x\leq 10$

$\mu\log_{\mu}^{x}-1>0$ $\log_{\mu}^{x}>\dfrac{1}{\mu}$ $Df=(\sqrt{\mu},+\infty)$

$x>\mu^{\frac{1}{\mu}} \rightarrow x>\sqrt{\mu}$

$y=\dfrac{\mu}{\varepsilon^{x}+1}$ $\varepsilon^{x}+1\neq 0$

$\varepsilon^{x}\neq -1$ $Df=\mathbb{R}$ ✓

$y=\dfrac{\mu}{\varepsilon^{x}-\mu}$ $\varepsilon^{x}-\mu\neq 0$

$\varepsilon^{x}\neq \mu$ $Df=\mathbb{R}-\left\{\dfrac{1}{\mu}\right\}$

$y=\dfrac{\mu}{\varepsilon^{x}-\mu}$ $\varepsilon^{x}-\mu\neq 0$

$\varepsilon^{x}\neq \mu \rightarrow x\neq \log_{\varepsilon}^{\mu}$

$Df=\mathbb{R}-\{\log_{\varepsilon}^{\mu}\}$

$y=\dfrac{\mu}{\mu^{x}-1}$ $\mu^{x}-1\neq 0$ $\mu^{x}\neq 1$

$Df=\mathbb{R}-\{0\}$

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$y = (\mathfrak{f}x+1)!$

$\mathfrak{E}x+1 \in \omega$

$\mathfrak{E}x \in \frac{\omega-1}{\mathfrak{E}} \rightarrow Df = \{x \mid x = \frac{\omega-1}{\mathfrak{E}}\ \mathfrak{g}\ k \in \omega\}$

$y = \left(\frac{\mathfrak{r}x-\mathfrak{r}}{\mathfrak{r}x-\mathfrak{d}}\right)!$ تمرین

$\frac{\mathfrak{r}x-\mathfrak{r}}{\mathfrak{r}x-\mathfrak{d}} \in \omega \rightarrow \mathfrak{r}x-\mathfrak{r} = \mathfrak{r}\omega x - \mathfrak{d}\omega$

$\mathfrak{r}x - \mathfrak{r}\omega x = \mathfrak{r} - \mathfrak{d}\omega \rightarrow \frac{\mathfrak{r}-\mathfrak{d}\omega}{\mathfrak{r}-\mathfrak{r}\omega}$

$Df = \{x \mid x = \frac{-\mathfrak{d}k-\mathfrak{r}}{\mathfrak{r}k-\mathfrak{r}}\ \mathfrak{g}\ k \in \omega\}$