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نام خانوادگی

کلاس دهم A سراسر

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$$جواب: \frac{\sin x - 1}{2 \cos x + 1} \rightarrow 2 \cos x + 1 \neq 0 \rightarrow 2 \cos x \neq -1 \rightarrow \cos x \neq -\frac{1}{2}$$

$$\rightarrow DF = R - \left\{ 2k\pi + \frac{2\pi}{3}, 2k\pi + \frac{4\pi}{3} \right\}$$

$$جواب: \frac{\sin x + 1}{\cos x - 1} \rightarrow \cos x - 1 \neq 0 \rightarrow \cos x \neq 1 \rightarrow DF = R - \{2k\pi\}$$

$$جواب: \frac{2 \sin x + 1}{\tan x + 1} \xrightarrow{\text{تangent}} \tan x + 1 \neq 0 \rightarrow \tan x \neq -1$$

$$\rightarrow DF = R - \left\{ k\pi - \frac{\pi}{4}, k\pi - \frac{3\pi}{4} \right\}$$

$$جواب: \frac{\cos x + 1}{\cot x - 1} \xrightarrow{\text{cot}} \cot x - 1 \neq 0 \rightarrow \cot x \neq 1$$

$$\rightarrow DF = R - \left\{ k\pi + \frac{\pi}{4}, k\pi \right\}$$

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$$جواب: \sin y = x^2 - 2 \rightarrow -1 \leq x^2 - 2 \leq 1$$

$$\rightarrow -1 \leq x^2 - 2 \rightarrow -1 \leq x^2 \rightarrow 1 \leq x^2, \quad x^2 - 2 \leq 1 \rightarrow x^2 \leq 3 \rightarrow x \leq \sqrt{3}, x \geq -\sqrt{3}$$

$$\rightarrow DF = [-\sqrt{3}, \sqrt{3}] \cup [-1, 1]$$

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جواب قسمت ب در صفحه بعد

$$1) y = \arccos(\sqrt{x} - 1) \rightarrow -1 \leq \sqrt{x} - 1 \leq 1$$

$$3 \rightarrow -1 \leq \sqrt{x} - 1 \rightarrow 0 \leq \sqrt{x} \rightarrow 0 \leq x, \sqrt{x} - 1 \leq 1 \rightarrow \sqrt{x} \leq 2 \rightarrow x \leq 4$$

$$\rightarrow Df = [0, 4] \quad \checkmark$$

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$$2) \cos y = |x| - 1 \rightarrow -1 \leq |x| - 1 \leq 1$$

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$$\rightarrow -1 \leq |x| - 1 \rightarrow 0 \leq |x| \rightarrow 0 \leq x, -x \geq x$$

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$$|x| - 1 \leq 1 \rightarrow |x| \leq 2 \rightarrow x \leq 2, x \geq -2$$

$$Df = (\{x, +\infty\} \cup \{-\infty, -x\}) \cap ((-\infty, 2] \cup [-2, +\infty))$$

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$$\rightarrow Df = [x, 2] \cup [-2, -x] \quad (1, 0)$$

18

$$1) y = \arcsin(x^2 + 2x + 1) \rightarrow -1 \leq x^2 + 2x + 1 \leq 1$$

$$-1 \leq x^2 + 2x + 1 \rightarrow 0 \leq x^2 + 2x + 2 \rightarrow 0 \leq (x+1)(x+2)$$

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$$x^2 + 2x + 1 \leq 1 \rightarrow x^2 + 2x \leq 0 \rightarrow x(x+2) \leq 0$$

$$\frac{x^2 - 1}{x^2 + 2x + 1} \leq 0$$

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

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الف) $y = \log_{x-4} x^2$ -4
 $\rightarrow x-4 > 0 \rightarrow x > 4 \rightarrow x > 2, x < -2$

3
 $\rightarrow Df = (2, +\infty) \cup (-\infty, -2)$

ب) $y = \log_{y-|x|} y$ (2) ✓
 $\rightarrow y-|x| > 0 \rightarrow y > |x| \rightarrow y > x, y < x$

$\rightarrow Df = (-2, 2)$

9
الف) $y = \log_{x^2-5} x$ -5
 $\rightarrow x^2-5 > 0 \rightarrow x^2 > 5 \rightarrow x > \sqrt{5}, x < -\sqrt{5}, x \neq 1 \rightarrow x \neq \sqrt{5}$

12
 $\rightarrow Df = (\sqrt{5}, \infty) - \{1\}$ (2) ✓

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ب) $y = \log_{x+3} x^2-1$
 $\rightarrow x^2-1 > 0 \rightarrow x^2 > 1 \rightarrow x > 1, x < -1$

$x+3 > 0 \rightarrow x > -3, x+3 \neq 1 \rightarrow x \neq -2$

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 $\rightarrow Df = (-3, -1) \cup (1, +\infty) - \{-2\}$

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الف) $y = \log \frac{x^r - rx + r}{x - r} \rightarrow \frac{x^r - rx + r}{x - r} > 0 \rightarrow \frac{(x-1)(x-r)}{x-r} > 0 \quad \checkmark$

3 $\frac{x}{-} \frac{1}{+} \frac{r}{+} \rightarrow Df = (r, +\infty) \cup (1, r)$

ب) $y = \log \frac{\frac{x+r}{x-r}}{x+0} \rightarrow \frac{x+r}{x-r} > 0 \rightarrow \frac{x-r}{x+r} > 0 = (-\infty, -r) \cup (r, +\infty)$

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$x+0 > 0 \rightarrow x > 0$, $x+0 \neq 1 \rightarrow x \neq -r$ Ⓟ ✓

9 $\rightarrow Df = (-0, -r) \cup (r, +\infty) - \{-r\}$

الف) $y = \sqrt{r - \log_y^{(x-r)}}$ $\rightarrow x-r > 0 \rightarrow x > r$ ^

$r - \log_y^{(x-r)} > 0 \rightarrow r > \log_y^{(x-r)} \rightarrow x-r < r, x < 2r$ A

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$\rightarrow Df = \{1, +\infty\} \quad (r, 1)$ Ⓟ

6. $y = \log(x \log^x x - 1) \rightarrow x$. قسم حذف

$$x \log^x x - 1 > 0 \rightarrow x \log^x x > 1 \rightarrow \log^x x > \frac{1}{x} \rightarrow x > x^{\frac{1}{x}}$$

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$$Df = (x^{\frac{1}{x}}, +\infty)$$



18 الف $y = \frac{x}{x^n + 1} \rightarrow x^n + 1 \neq 0 \rightarrow x^n \neq -1 \rightarrow x \neq \log_x^{-1}$ 9

$\rightarrow Df = R - \{\log_x^{-1}\}$

21 ب $y = \frac{x}{x^n - 1} \rightarrow x^n - 1 \neq 0 \rightarrow x^n \neq 1 \rightarrow x \neq 0$

کیوان پارس $\rightarrow Df = R - \{0\}$ ✓

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$$2) y = \frac{r}{r^n - r} \rightarrow r^n - r \neq 0 \rightarrow r^n \neq r \rightarrow n \neq \log_r r$$

$$3 \rightarrow Df = R - \{\log_r r\} \quad (\text{P})$$

$$5) y = \frac{r}{r^n - r} \rightarrow r^n - r \neq 0 \rightarrow r^n \neq r \rightarrow n \neq \log_r r$$

$$\rightarrow Df = R - \{\log_r r\} \quad \checkmark$$

$$9) y = (r^{n+1})! \rightarrow r^{n+1} \in W \rightarrow r^n \in W-1 \rightarrow n \in \frac{W-1}{r}$$

$$12 \rightarrow Df = \left\{ \frac{n-1}{r} \mid n \in W \right\} \quad (\text{P})$$

$$14) y = \left(\frac{r^n - r}{r^n - 0} \right)! \rightarrow \frac{r^n - r}{r^n - 0} \in W \rightarrow r^n - r \in W(r^n - 0)$$

$$\rightarrow r^n - r \in r^n W - 0W \rightarrow r^n - r \in -0W + r$$

$$18) n(r - rW) \in -0W + r \rightarrow n \in \frac{-0W + r}{r - rW}$$

$$\rightarrow Df = \left\{ \frac{-0W + r}{r - rW} \mid n \in W \right\}$$

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