

← سوال ۱

$\Rightarrow a = 2$

$\sqrt{x+b} \rightarrow [2, \infty) \xrightarrow{\text{مشتق}} b = 4$

$a > 0 \rightarrow 1$

← سوال ۲

$\Delta < 0 \rightarrow 4 - 4(1-m^2) < 0 \rightarrow 4 - 4 + 4m^2 < 0 \rightarrow m^2 - 1 < 0 \rightarrow \frac{1}{+ \phi} - \frac{1}{\phi} \rightarrow$
 $\max \Rightarrow 1 \quad \min \Rightarrow -1 \rightarrow 4 - (-1) = 5$

← سوال ۳

$[n] + [-n] \rightarrow \begin{cases} n \in \mathbb{Z} \rightarrow 0 \\ n \notin \mathbb{Z} \rightarrow -1 \end{cases}$

$\rightarrow \frac{-2}{-\phi} + \frac{2}{\phi} \rightarrow [-2, 2]$

$\Rightarrow \{ -2, -1, 0, 1, 2 \} \Rightarrow 5$

← سوال ۴

$\sqrt{x^2(x+3)} \rightarrow \frac{-3}{-\phi} + \frac{3}{\phi} \rightarrow D_f = [2, \infty)$
 $\sqrt{\frac{(x-1)(x+1)x^2(x-3)}{(x-1)(x^2+x+1)}} \rightarrow \frac{-1}{+\phi} - \frac{1}{-\phi} - \frac{1}{-\phi} + \frac{3}{+\phi} \Rightarrow D_f = (-\infty, -1] \cup [2, \infty) \cup \{0\}$

← سوال ۵

$\sqrt{|x-2| - 3} \rightarrow |x-2| - 3 \geq 0 \rightarrow |x-2| \geq 3$

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

$x-2 \leq -3 \rightarrow x \leq -1$

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

(۱/۵)

$\sqrt{4 - |x-m|} \rightarrow 4 - |x-m| \geq 0 \rightarrow |x-m| \leq 4 \rightarrow -4 \leq x-m \leq 4 \rightarrow -4 \leq x \leq 4$
 $D_f = [-4, 4]$

← سوال ۶

$\Delta = 0 \rightarrow 1 - m^2 \geq 0 \rightarrow m^2 \leq 1 \rightarrow -1 \leq m \leq 1$
 $\Delta < 0 \rightarrow 1 + m^2 \geq 0 \rightarrow m^2 \geq -1 \rightarrow$

$D_f = (-\infty, \infty)$

$3 - |x-5| \neq 1 \rightarrow |x-5| \neq 2 \rightarrow \begin{cases} x-5 \neq 2 \rightarrow x \neq 7 \\ x-5 \neq -2 \rightarrow x \neq 3 \end{cases} \cap \Rightarrow D_f = [2, 8] - \{3, 7\}$
 $3 - |x-5| \geq 0 \rightarrow -3 \leq x-5 \leq 3 \rightarrow 2 \leq x \leq 8$

← 7) 3

$$y = \frac{\sin^2 x - 1}{\cos x} \rightarrow \cos x \neq 0 \rightarrow \text{Unit Circle} \rightarrow D_f = \mathbb{R} - \left\{ k\pi \pm \frac{\pi}{2} \right\}$$

$$y = \frac{\cos x}{1 - \cos x} \Rightarrow \cos x \neq \frac{1}{2} \Rightarrow \text{Unit Circle} \Rightarrow D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{3}, k\pi - \frac{\pi}{3} \right\}$$

← 8) 3

$$\begin{aligned} \text{اذا } |2n+1| \neq |n+3| &\rightarrow 2n+1 \neq n+3 \rightarrow n \neq 2 \\ &\rightarrow 2n+1 \neq -n-3 \rightarrow 3n \neq -4 \rightarrow n \neq -\frac{4}{3} \end{aligned}$$

$$D_f = \mathbb{R} - \left\{ n = \frac{4}{3} \right\}$$

$$\text{ب) } \frac{-\frac{4}{3}}{+\phi - \phi +} \rightarrow D_f = (-\infty, -\frac{4}{3}] \cup [2, \infty +)$$

← 9) 3

$$2n-1 > 0 \rightarrow n > \frac{1}{2} \Rightarrow \text{I}$$

$$\log_{2n-1} > 0 \rightarrow 2n-1 > 1 \rightarrow n > 1 \Rightarrow \text{II}$$

$$\log_{\log_{2n-1}} > 0 \rightarrow \log_{2n-1} > 1 \rightarrow 2n-1 > 2 \rightarrow n > \frac{3}{2} \Rightarrow \text{III}$$

$$\left. \begin{array}{l} \text{I} \\ \text{II} \\ \text{III} \end{array} \right\} \Rightarrow \text{I} \cap \text{II} \cap \text{III} \Rightarrow (2, \infty +)$$

1.5

← 10) 3

$$\text{اذا } 1 - \cos x > 0 \rightarrow \cos x > \frac{1}{2}$$

$$\text{Unit Circle} \rightarrow D_f = \mathbb{R} - \left[k\pi + \frac{\pi}{3}, k\pi + \frac{2\pi}{3} \right]$$

$$\text{ب) } \frac{n-1}{n+1} > 0 \rightarrow \frac{-1}{\phi - \phi +} \rightarrow (-\infty, -1) \cup (1, \infty +)$$

$$\log \frac{n-1}{n+1} > 0 \rightarrow \frac{n-1}{n+1} > 1 \rightarrow \frac{n-1-n-1}{n+1} > 0 \rightarrow \frac{-2}{n+1} < 0 \rightarrow \frac{-1}{\phi +} (-\infty, -1) \text{ (II)}$$

$$D_f = \text{I} \cap \text{II} \Rightarrow (-\infty, -1)$$

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

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

$$9) \log_{\frac{1}{5}} \log_{\frac{1}{5}}^{x-1} \rightarrow x-1 > 0 \rightarrow x > 1$$

$$\log_{\frac{1}{5}}^{x-1} > 0 \rightarrow x-1 > 0 \rightarrow x-1 > 1 \rightarrow x > 2$$

$$\log_{\frac{1}{5}} \log_{\frac{1}{5}}^{x-1} \geq 0 \xrightarrow[\text{منتهى!}]{\text{منبغى ههرا}} \log_{\frac{1}{5}}^{x-1} \leq \frac{1}{2} \rightarrow \log_{\frac{1}{5}}^{x-1} \leq 1 \rightarrow x-1 \leq 2 \rightarrow x \leq 3$$

$$\hookrightarrow D_f = (1, 3]$$