

سوال ۱)  $a \cdot x = 0 \Rightarrow a = 2$   $2x + b \geq 0$   $\frac{-b}{-2} +$   $-\frac{b}{2} = 3 \rightarrow b = -6$  (۱)

سوال ۲)  $\Delta \leq 0$   $x^2 - 4(1)(2-m^2) \leq 0$   $4m^2 - 4 \leq 0$   $\frac{-1}{+} \frac{1}{-} \frac{1}{+}$   $[-1, 1] \sim$   $1 - (-1) = 2$  (۲)

سوال ۳) ①  $x^2 - x^2 \geq 0$   $\frac{-x}{-1} \frac{x}{+1} -$   $[-x, x]$   $\Rightarrow D_f = \{-x, -1, 0, 1, x\} \rightarrow n = 5$  (۳)  
 ②  $[x] + [-x] \neq -1 \rightarrow x \notin \mathbb{Z}$

سوال ۴) الف)  $x^2(x+3) \geq 0$   $\frac{-x}{-1} \frac{x}{+1} \frac{x}{+1}$   $D_f = [-3, +\infty)$  (۴)  
 ب)  $\frac{(x-1)(x+1)x^2(x-3)}{(x-1)(x^2+x+1)} \geq 0$   $\frac{-1}{+} \frac{x}{-} \frac{x}{-} \frac{x}{-} \frac{3}{+}$   $D_f = (-\infty, -1] \cup \{0\} \cup [3, +\infty)$

سوال ۵) الف)  $|x-2| - 3 \geq 0$   $|x-2| \geq 3 \rightarrow \begin{cases} x-2 \geq 3 \rightarrow x \geq 5 \\ x-2 \leq -3 \rightarrow x \leq -1 \end{cases}$   $D_f = (-\infty, -1] \cup [5, +\infty)$  (۵)  
 ب)  $x - |x-2| \geq 0$   $|x-2| \leq x \rightarrow -x \leq x-2 \leq x \rightarrow -x \leq x \leq 2$   $D_f = [-2, 2]$

سوال ۶) الف)  $1 - x|x| \geq 0$   $x|x| \leq 1$   $\begin{matrix} \ominus \checkmark \\ \oplus \checkmark \end{matrix}$   $\oplus \rightarrow x^2 \leq 1$   $-1 \leq x \leq 1$   $\rightarrow D_f = [-1, 1]$  (۶)

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

سوال ۷) الف)  $\cos x \neq 0$   $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2}\}$  (۷)

ب)  $2 \cos x - 1 \neq 0$   $\cos x \neq \frac{1}{2}$   $D_f = \mathbb{R} - \{2k\pi + \frac{\pi}{3}, 2k\pi - \frac{\pi}{3}\}$

سوال ۸) الف)  $|2x+1| \neq |x+3|$   $\xrightarrow{\text{مربع}}$   $4x^2 + 4x + 1 \neq x^2 + 6x + 9$   $3x^2 - 2x - 8 \neq 0$  (۸)  
 $x_{1,2} = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-(-2) \pm \sqrt{(-2)^2 - 4(3)(-8)}}{2 \cdot 3}$   $\frac{12}{3} = 4$   $-\frac{2}{3} = -\frac{2}{3}$   $D_f = \mathbb{R} - \{-\frac{2}{3}, 4\}$

١)  $|2x+1| - |x+3| \geq 0 \quad |2x+1| \geq |x+3| \rightarrow 3x^2 - 2x - 1 \geq 0$   
(از قسمت الف می دانیم)

$$\begin{array}{c|c|c|c|c} -\frac{1}{3} & & 1 & & \\ \hline + & - & - & + & + \end{array}$$

$D_f = (-\infty, -\frac{1}{3}] \cup [1, +\infty)$

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

②  $\log_{\omega}^{(2x-1)} > 0 \quad 2x-1 > 1 \rightarrow x > 1$

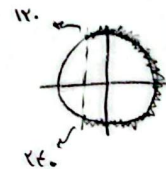
③  $\log_{\omega}^{\log_{\omega}^{(2x-1)}} \geq 0 \rightarrow -\log_r^{\log_{\omega}^{(2x-1)}} \geq 0 \quad \log_{\omega}^{(2x-1)} \leq 1 \quad 2x-1 \leq \omega \rightarrow x \leq 3$

(9 سوال)

$\rightarrow D_f = (1, 3]$

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الف)  $2\cos x + 1 > 0 \quad \cos x > -\frac{1}{2}$



$D_f = (2K\pi - \frac{2\pi}{3}, 2K\pi + \frac{2\pi}{3})$

(10 سوال)

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١) ①  $x+1 \neq 0 \rightarrow x \neq -1$

②  $\frac{x-1}{x+1} > 0 \quad \begin{array}{c|c|c|c|c} -1 & & 1 & & \\ \hline + & - & - & + & + \end{array}$

③  $\log \frac{x-1}{x+1} \geq 0 \rightarrow \frac{x-1}{x+1} \geq 1 \quad \frac{x-1-x-1}{x+1} \geq 0$

$$\begin{array}{c|c|c|c|c} -1 & & & & \\ \hline + & - & - & + & + \end{array}$$

$\rightarrow D_f = (-\infty, -1)$