

۲. آفرین عالی نوشتہ

۱- $D_f = [3, +\infty) \Rightarrow y = ax + b$
 $\downarrow x^2$ منبسط: $\Rightarrow a = 2, b = -4 \Rightarrow y = 2x - 4$ $x=3 \Rightarrow \sqrt{4+b} = \sqrt{4-4} = 0$

۲- $\Rightarrow x^2 + 2x + 2 - m^2 \geq 0 \Rightarrow (x+1)^2 + 1 - m^2 \geq 0 \Rightarrow 1 - m^2 \geq 0 \Rightarrow m^2 \leq 1 \Rightarrow -1 \leq m \leq 1 \Rightarrow (-1, 1)$

۳- $\begin{cases} 4 - x^2 \geq 0 \Rightarrow x^2 \leq 4 \Rightarrow -2 \leq x \leq 2 \Rightarrow -2, -1, 0, 1, 2 \\ [x] + [-x] + 1 \neq 0 \Rightarrow \text{if } x \in \mathbb{Z} \rightarrow [x] + [-x] = 0 \end{cases}$
 مضامین اضافی x

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

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

ب) $\Rightarrow 4 - |2-x| \geq 0 \Rightarrow |2-x| \leq 4 \Rightarrow -4 \leq 2-x \leq 4 \Rightarrow -4 \leq -x \leq 2 \Rightarrow -2 \leq x \leq 4 \Rightarrow D_f = [-2, 4]$

۶- الف) if $x \geq 0 \Rightarrow 1 - x^2 \geq 0 \Rightarrow x^2 \leq 1 \Rightarrow -1 \leq x \leq 1$
 if $x < 0 \Rightarrow 1 + x^2 \geq 0$ $\Rightarrow$ ہر وقت درست ہے $\Rightarrow D_f = (-\infty, 1]$

ب) $\Rightarrow \sqrt{3-|x-5|} \neq 1 \Rightarrow 3-|x-5| \neq 1 \Rightarrow -|x-5| \neq -4 \Rightarrow |x-5| \neq 4 \Rightarrow x \neq 9, 1$
 $\hookrightarrow 3-|x-5| \geq 0 \Rightarrow |x-5| \leq 3 \Rightarrow -3 \leq x-5 \leq 3 \Rightarrow 2 \leq x \leq 8$
 $\Rightarrow D_f = [2, 8] - \{1, 9\}$

۷- الف) $\Rightarrow \cos x \neq 0 \Rightarrow \bigcirc \Rightarrow D_f = \mathbb{R} - \left\{k\pi + \frac{\pi}{2}\right\}$

ب) $\Rightarrow 2\cos x - 1 \neq 0 \Rightarrow 2\cos x \neq 1 \Rightarrow \cos x \neq \frac{1}{2} \Rightarrow \bigcirc \Rightarrow \mathbb{R} - \left\{2k\pi \pm \frac{\pi}{3}\right\} = D_f$

۸- الف) $\Rightarrow |2x+1| - |x+3| \neq 0 \Rightarrow |2x+1| \neq |x+3| \Rightarrow 2x+1 \neq x+3 \Rightarrow x \neq 2$
 $\hookrightarrow 2x+1 \neq -x-3 \Rightarrow 3x \neq -4 \Rightarrow x \neq -\frac{4}{3}$
 $\Rightarrow D_f = \mathbb{R} - \left\{2, -\frac{4}{3}\right\}$

ب) $\Rightarrow |2x+1| - |x+3| \geq 0 \Rightarrow |2x+1| \geq |x+3| \Rightarrow 2x+1 \geq x+3 \Rightarrow x \geq 2$
 $\hookrightarrow 2x+1 \leq -x-3 \Rightarrow 3x \leq -4 \Rightarrow x \leq -\frac{4}{3}$
 $\Rightarrow D_f = (-\infty, -\frac{4}{3}] \cup [2, +\infty)$

$$\rightarrow \log_{\omega} \log_{\omega} x^{-1} \geq 0 \xrightarrow{\text{جمله اول}} \log_{\omega} x^{-1} \leq 1 \rightarrow x^{-1} \leq \omega \rightarrow x \leq \frac{1}{\omega}$$

* این مسائل به واقع در این صورت است

$$\rightarrow \log_{\omega} x^{-1} > 0 \rightarrow x^{-1} > 1 \rightarrow x < 1 \rightarrow x > \frac{1}{\omega}$$

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

$$\xrightarrow{n} D_{f^5}(1, \frac{1}{\omega})$$

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$$\text{الف) } \rightarrow \cos x + 1 > 0 \rightarrow \cos x > -1 \rightarrow \rightarrow D_f = (x - \frac{\pi}{2}, x + \frac{\pi}{2})$$

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$$\text{ب) } \left\{ \begin{array}{l} \frac{x-1}{x+1} \geq 0 \rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1-(x+1)}{x+1} \geq 0 \rightarrow \frac{-2}{x+1} \geq 0 \rightarrow x+1 < 0 \rightarrow x < -1 \rightarrow (-\infty, -1) \\ \frac{x-1}{x+1} > 0 \rightarrow \frac{-1}{x+1} > 0 \rightarrow (-\infty, -1) \cup [1, +\infty) \end{array} \right\} \xrightarrow{n} D_{f^5}(-\infty, -1)$$