

$$D_f = \mathbb{R} - \{1, 0\}$$

الف)  $x^2 - 1 \neq 0$

$$x(x-1) \neq 0 \rightarrow x \neq 1 \rightarrow x \neq 0$$

ب)  $x^2 - 4x + 4 \neq 0 \quad \Delta \rightarrow b^2 - 4ac \Rightarrow 16 - 4(1)(4) = 16 - 16 = 0 = \Delta$

$$\Delta < 0 \rightarrow D_f = \mathbb{R} \quad (-\infty, +\infty)$$

ج)  $x^2 + x + 1 \neq 0 \quad \Delta \rightarrow b^2 - 4ac = 1 - 4(1)(1) = -3 = \Delta$

$$\Delta < 0 \rightarrow D_f = \mathbb{R} \quad (-\infty, +\infty)$$

د)  $x^2 - 1 \neq 0 \rightarrow x^2(x-1) \neq 0$

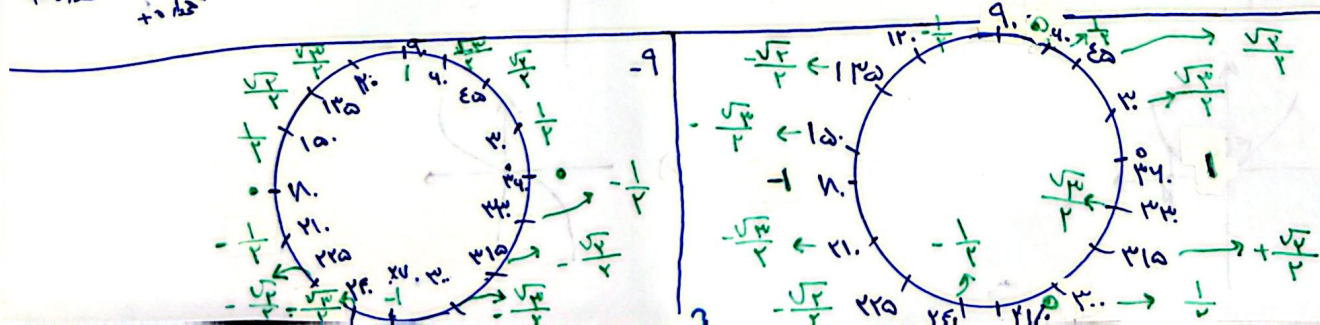
$$\begin{array}{c} * \\ -1 \quad 0 \quad 1 \\ + \quad - \quad + \end{array} \quad D_f = \mathbb{R} - \{-1, 0, 1\}$$

هـ)  $4 - x \geq 0 \Rightarrow x \leq 4$  ,  $x - 1 \geq 0 \Rightarrow x \geq 1$   $D_f = [1, 4]$

و)  $x^2 + 1 \neq 0$   $D_f = \mathbb{R}$

ز)  $x - 1 \geq 0 \Rightarrow x \geq 1$  ,  $x - 1 \neq 0 \rightarrow x \neq 1$   $D_f = [1, +\infty) \cup (1, +\infty)$

ح)  $|x| + x^2 \neq 0$   $D_f = \mathbb{R}$





الف)  $\cos \frac{\pi}{4} ? \rightarrow -\frac{1}{\sqrt{2}} \xrightarrow{\text{مربع}} \frac{1}{2} \rightarrow \frac{1}{2} \sin \frac{\pi}{2} \xrightarrow{\text{حل}} \frac{\pi}{4}, \frac{3\pi}{4}$

ب)  $\cos \frac{11\pi}{4} \rightarrow \frac{\sqrt{2}}{2} \xrightarrow{\text{مربع}} \frac{1}{2} \rightarrow -\frac{\sqrt{2}}{2} \sin \frac{\pi}{2}, \frac{3\pi}{2} \rightarrow \frac{7\pi}{4}, \frac{5\pi}{4}$

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