

$$\text{الف) } y = \sqrt{1-2x^2} \rightarrow 1-2x^2 \geq 0 \Rightarrow 2(1-x^2) \geq 0 \rightarrow 2(\sqrt{1-x^2})(\sqrt{1-x^2}) \geq 0 \Rightarrow \begin{array}{c} -\sqrt{1-x^2} \quad \sqrt{1-x^2} \\ | \quad | \\ - \quad + \quad - \end{array} \rightarrow D_f = [-\sqrt{1-x^2}, \sqrt{1-x^2}]$$

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$$\text{ب) } y = \sqrt{3|x|-9} \Rightarrow 3|x|-9 \geq 0 \Rightarrow 3|x| \geq 9 \rightarrow |x| \geq 3 \rightarrow \begin{cases} x \geq 3 \\ x \leq -3 \end{cases} \Rightarrow D_f = (-\infty, -3] \cup [3, +\infty)$$

$$\text{الف) } y = \sqrt{\frac{|x|+1}{|x|-3}} \Rightarrow |x|-3 \neq 0 \Rightarrow |x| \neq 3 : x \neq \pm 3 \Rightarrow D_f = \mathbb{R} - \{\pm 3\}$$

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$$\text{ب) } y = \sqrt{\frac{\sqrt{x+1}}{\sqrt{x-3}}} \rightarrow x \geq 0 \Rightarrow \begin{cases} x \geq 0 \\ \sqrt{x-3} \neq 0 \Rightarrow \sqrt{x} \neq 3 \Rightarrow x \neq 9 \end{cases} \Rightarrow D_f = [0, +\infty) - \{9\}$$

$$\text{الف) } \frac{\sin x}{1 - \cos x} = 1 - \cos x \neq 0 \rightarrow 1 - \cos x \neq 0 \rightarrow \cos x \neq 1 \Rightarrow D_f = \mathbb{R} - \{2k\pi \pm \frac{\pi}{2}\}$$

$$\text{ب) } \frac{\cos y + 1}{1 - \sin x} = 1 - \sin x \neq 0 \rightarrow \sin x \neq 1 \Rightarrow D_f = \mathbb{R} - \{2k\pi - \frac{\pi}{2}, 2k\pi + \frac{\pi}{2}\}$$

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$$\text{ج) } y = \frac{\frac{\sin}{\cos} \tan x + 1}{\cot x - 1} = \frac{\tan x + 1}{\cot x - 1} \Rightarrow \cot x \neq 1 \Rightarrow \cot x \neq 1, \sin x \neq 0 \Rightarrow D_f = \mathbb{R} - \{k\pi \cup k\pi + \frac{\pi}{2} \cup k\pi + \frac{\pi}{4}\}$$

$$y = \frac{1}{\sqrt{1-2x-\frac{1}{x}}} : \sqrt{1-2x-\frac{1}{x}} > 0 \Rightarrow 1-2x-\frac{1}{x} > 0 \Rightarrow |x-2| > \frac{1}{x}$$

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$$x-2 < \frac{1}{x} \text{ و } x-2 > \frac{1}{x} \Rightarrow x < \frac{1}{x} \text{ و } x > \frac{1}{x} \Rightarrow D_f = (-\infty, \frac{1}{x}) \cup (\frac{1}{x}, +\infty)$$

$$y = \frac{\sin x + 1}{1 - \sin^2 x} = \frac{\sin x + 1}{1 - \sin^2 x} \Rightarrow 1 - \sin^2 x \neq 0 \Rightarrow 1 - \sin^2 x \neq 0 \rightarrow \sin^2 x \neq 1 \rightarrow \sin x \neq \pm 1 \Rightarrow D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{2}\}$$

$$\text{الف) } \sqrt{1-2|x|} = 1-2|x| \geq 0 \Rightarrow 2|x| \leq 2 \Rightarrow |x| \leq 1 \Rightarrow -1 \leq x \leq 1 \Rightarrow D_f = [-1, 1]$$

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$$\text{ب) } y = \sqrt{\frac{|x|}{|x|}} \Rightarrow x \neq 0$$

از آبیایی که همیشه در حالتی که عددی نامعین بود، زیر دایره یا بیضی نامعین باشد، پس

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

فنا شود، و به عنوان تابع نامعین