

$$y = \frac{1}{\sqrt{3-|x-4|}} - 1 \neq 0$$

$$3-|x-4| \geq 0 \quad |x-4| \leq 3$$

$$|x-4| \leq 3$$

$$-3 \leq x-4 \leq 3$$

$$1 \leq x \leq 7$$

$$D_f = [1, 7] - \{4\}$$

$$y = \frac{\cos x}{2\cos x - 1} \neq 0$$

$$2\cos x \neq 1 \rightarrow \cos x \neq \frac{1}{2}$$

$$D_f = \mathbb{R} - \left\{ 2k\pi + \frac{\pi}{3}, 2k\pi + \frac{5\pi}{3} \right\}$$

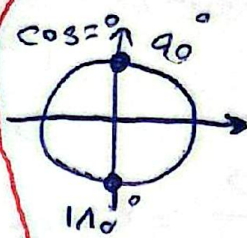


$$y = \sqrt{1-x|x|} \geq 0$$

$$x|x| \leq 1$$

$$\left. \begin{array}{l} 0 \leq x \leq 1 \rightarrow \text{آگ مثبت} \\ \text{همیشه برقرار} \rightarrow \text{آگ منفی باشد} \end{array} \right\} \Rightarrow D_f = (-\infty, 1]$$

$$y = \frac{\sin^2 x - 1}{\cos x} \neq 0$$



$$D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{2} \right\}$$

$$y = \sqrt{|2x+1| - |x+3|} \geq 0 \quad (\text{ب})$$

$$|2x+1| \geq |x+3| \rightarrow \sqrt{2x+1} \geq \sqrt{x+3} + 0$$

$$2x+1 \geq x+3 \rightarrow (2x-1)(x+3) \geq 0$$

$$x = -\frac{1}{2}, 2 \quad \begin{array}{c} -\frac{1}{2} \quad 2 \\ + \quad - \quad + \end{array}$$

$$D_f = (-\infty, -\frac{1}{2}] \cup [2, +\infty)$$

$$y = \log(2\cos x + 1) \quad (\text{الف}) \quad (10)$$

$$2\cos x + 1 > 0 \rightarrow 2\cos x > -1$$

$$\cos x > -\frac{1}{2} \quad D_f = (2k\pi - \frac{2\pi}{3}, 2k\pi + \frac{2\pi}{3})$$

$$k \in \mathbb{Z}$$

$$y = \sqrt{\log \frac{x-1}{x+1}} \geq 0 \quad (\text{ب})$$

$$\frac{x-1}{x+1} > 0 \quad \begin{array}{c} -1 \quad 1 \\ + \quad - \quad + \end{array} \quad (-\infty, -1) \cup (1, +\infty) \quad (1)$$

$$D_f = (-\infty, -1) \cup (1, +\infty)$$

$$(2) \rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1-(x+1)}{x+1} \geq 0$$

$$\frac{-2}{x+1} \geq 0 \rightarrow x+1 < 0 \rightarrow x < -1$$

$$y = \frac{x+3}{\sqrt{|2x+1| - |x+3|}} \neq 0 \quad (\text{الف}) \quad (1)$$

$$|2x+1| \neq |x+3| \rightarrow (2x+1)^2 \neq (x+3)^2$$

$$4x^2 + 4x + 1 \neq x^2 + 6x + 9 \Rightarrow 3x^2 - 2x - 8 \neq 0$$

$$3x^2 - 2x - 8 = 0 \Rightarrow (3x+4)(x-2) = 0$$

$$x = -\frac{4}{3}, 2 \quad \begin{array}{c} -\frac{4}{3} \quad 2 \\ + \quad - \quad + \end{array}$$

$$D_f = \mathbb{R} - \{-\frac{4}{3}, 2\}$$

$$f(x) = \sqrt{\log \log \frac{(x-1)^2}{x^2}} \geq 0 \quad (11) \quad (9)$$

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

$$\log \frac{(x-1)^2}{x^2} \leq 1 \rightarrow x-1 \leq x$$

$$x \leq 2 \rightarrow x \leq 2 \quad (2)$$

$$(1) \cap (2) \rightarrow D_f = (1, 2]$$

$$(11) \rightarrow x-1 > 1 \rightarrow x > 2 \rightarrow x > 2$$

تکلیف ۲

آترسیا آفا صالی

$$\frac{3}{-1+}$$

$$\Delta = 0 \Rightarrow a^2 - 4(a-1)(b) = a^2 - 4ab + 4b = 0 \quad (1)$$

$$x=3 \Rightarrow (a-1)9 + 3a + b = 12a + b = 11 \Rightarrow (12 \times \frac{3}{4}) + b = 11$$

$$9a - 11$$

$$b = -\frac{12 \times 3}{4} + \frac{12 \times 3}{4} = -\frac{11}{1}$$

$$\frac{-a \pm \sqrt{a^2 - 4(a-1)(b)}}{2(a-1)} = \frac{-a}{2(a-1)} = 3 \Rightarrow \boxed{a = \frac{12}{5}}$$

$$f(x) = \sqrt{x^2 + 2x + 2 - m^2} \geq 0$$

$$D_f = \mathbb{R}$$

$$\Delta \leq 0 \Rightarrow b^2 - 4(a)(c) \leq 0$$

$$4 - 4(2 - m^2)(1) = 4 - 8 + 4m^2 = 4m^2 - 4 \leq 0 \Rightarrow 4m^2 \leq 4$$

$$m^2 \leq 1 \Rightarrow -1 \leq m \leq 1$$

$$-1 \leq m \leq 1 \quad \leftarrow \text{اختلاف}$$

$$f(x) = \frac{\sqrt{4 - x^2} \geq 0}{[x] + [-x] + 1 \neq 0}$$

$$4 - x^2 \geq 0 \rightarrow 2 \geq x \geq -2 \rightarrow -2 \leq x \leq 2 \quad (2)$$



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$$[x] + [-x] \neq -1$$

$$\sqrt{(x^2 - 1)(x^2 - 3x^2)} \geq 0$$

$$\sqrt{x^2 + 3x^2} \geq 0$$

$$x^2(x + 3) \geq 0$$

همواره +

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

$$D_f = [-3, +\infty)$$

$$y = \sqrt{4 - |2 - x|} \geq 0$$

$$4 \geq |2 - x| \quad D_f = [-2, 6]$$

$$4 \geq 2 - x \geq -2$$

$$6 \geq x \geq -2$$

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

$$|x - 2| \geq 3$$

$$x - 2 \geq 3 \rightarrow \boxed{x \geq 5}$$

$$-3 \geq x - 2$$

$$\boxed{x \leq -1}$$

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