

نام و نام خانوادگی کلاس شماره تکلیف شماره پاسخنانه تشریحی

$$f(x) = \sqrt{(a-2)x^2 + 4x + b}$$

$$D_f = \{x \mid \dots\}$$

در $x=3$ صفر شود

$$(a-2)(3)^2 + 4 \cdot 3 + b = 0$$

$$9a - 18 + 12 + b = 0$$

$$b = 18 - 12a - 12$$

$$b = -4$$

$$a-2=0$$

$$a=2$$

$$a-2 > 0 \rightarrow a > 2$$

$$18 - 12 = 6$$

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

$$x^2 + 2x + 2 - m^2 \geq 0 \Rightarrow x^2 + 2x + 1 + 1 - m^2 \geq 0$$

$$(x+1)^2 + 1 - m^2 \geq 0$$

مقدار صفر شود

$$1 - m^2 \geq 0$$

$$-1 \leq m \leq 1$$

$$1 - (-1) = 2$$

$$f(x) = \sqrt{4 - x^2}$$

$$[x] + [-x] + 1 \neq 0$$

$$4 - x^2 \geq 0$$

$$-2 \leq x \leq 2 \rightarrow [-2, 2]$$

عدد صحیح این بازه $\rightarrow -2, -1, 0, 1, 2$

$$[x] + [-x] + 1 = 1$$

$$[2] + [-2] + 1 = 1 - 2 + 1 = 0$$

$$[1] + [-1] + 1 = 1 - 1 + 1 = 1$$

$$y = \sqrt{x^2 + 3x} \quad x^2 + 3x \geq 0 \quad x(x+3) \geq 0 \quad D_f = [-3, +\infty)$$

$$y = \sqrt{\frac{(x^2-1)(x^2-3x)}{x^2-1}}$$

$$\frac{(x+1)(x-1)x^2(x-3)}{(x-1)(x^2+3x+1)}$$

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

$$\frac{-1 \cdot 0 \cdot +1 \cdot +3}{1 \cdot -1 \cdot -1 \cdot -1} = 3$$

$$D_f = (-\infty, -1) \cup \{0\} \cup [3, +\infty)$$

$$f(x) = \sqrt{|x-2|} - 3$$

$$|x-2| - 9 \geq 0$$

$$|x-2| \geq 9 \rightarrow \begin{cases} x-2 \geq 9 \rightarrow x \geq 11 \\ x-2 \leq -9 \rightarrow x \leq -7 \end{cases}$$

$$D = (-\infty, -7] \cup [11, +\infty)$$

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

$$4 - |x-2| \geq 0$$

$$|x-2| \leq 4$$

$$\rightarrow -4 \leq x-2 \leq 4$$

$$-4 \leq x-2 \leq 4$$

$$-2 \leq x \leq 6$$

$$D = [-2, 6]$$

$$\text{الف) } y = \sqrt{1-x|x|}$$

$$1-x|x| \geq 0$$

$$x|x| \leq 1$$

$$D = (-\infty, 1]$$

$$\text{ب) } y = \frac{1}{\sqrt{1-x-d}-1}$$

$$1-x-d \geq 0$$

$$\sqrt{1-x-d}-1 \neq 0$$

$$1-x-d \leq 1 \rightarrow -1 \leq x-d \leq 1$$

$$\sqrt{1-x-d} \neq 1$$

$$1-x-d \neq 1$$

$$x \leq 1$$

$$x \neq 1, x \neq d$$

$$D = [1, d) \cup (d, 1) \cup (1, d)$$

$$\text{الف) } y = \frac{\sin x - 1}{\cos x}$$

$$\cos x \neq 0$$



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

$$\text{ب) } y = \frac{\cos x}{1 - \cos x}$$

$$1 - \cos x \neq 0$$

$$\cos x \neq 1$$



$$D = \mathbb{R} - \left\{ k\pi + \frac{\pi}{1} \right\}$$

$$\text{الف) } y = \frac{x+1}{|x+1| - |x+1|}$$

$$|x+1| - |x+1| \neq 0$$

$$|x+1| \neq |x+1|$$

$$D = \mathbb{R} - \left\{ -\frac{1}{2}, 1 \right\}$$

$$x^2 - 2x = 2 \neq 0$$

$$(x+1)^2 \neq (x+1)^2$$

$$x^2 + 2x + 1 \neq x^2 + 2x + 1$$

$$x^2 - 2x - 1 \neq 0$$

$$\text{ب) } y = \sqrt{|x+1| - |x+1|}$$

$$|x+1| - |x+1| \geq 0$$

$$|x+1| \geq |x+1| \rightarrow (x+1)^2 \geq (x+1)^2$$

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

$$-\frac{1}{2} \leq x \leq 1$$

$$(x-1)(x+1) \geq 0$$

$$f(x) = \sqrt{\log_a \log_a (x-1)}$$

$$\log_a (x-1) > 0$$

$$\log_a \log_a (x-1) \geq 0$$

$$x-1 > 1$$

$$\log_a (x-1) \leq 1$$

$$x-1 \leq a$$

$$\frac{1}{a} \leq x \leq a$$

$$D_f = (1, a]$$

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

$$1 + \cos x > 0$$

$$\cos x > -1$$



$$D = \left(k\pi - \frac{\pi}{2}, k\pi + \frac{\pi}{2} \right)$$

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

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

$$\frac{x-1}{x+1} \geq 1$$

$$\frac{x-1}{x+1} \geq 1$$

$$(-\infty, -1)$$

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