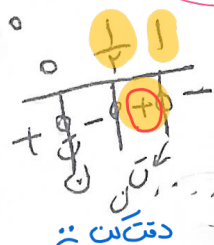


تبی طائی
تالیف می رده
یارم دست
1975 آذین

سوال 11
الف) $x < 0$ و $x \geq 1$ و $x \neq 1$ و $x \neq 0$

دستگاه
 $D_f = (-\infty, 0) \cup [1, +\infty)$

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



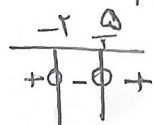
ب) شرط فرجه ها $x \neq -1$ $x \neq 0$ $x \neq 1$ $x \neq 2$

$\frac{3x+4+x-1}{(x-1)(x+2)} \neq 0 \Rightarrow x+3 \neq 0 \Rightarrow x \neq -3$

$D_f = \mathbb{R} - \{-1, -\frac{5}{2}, -1, 0, 1\}$

سوال 12
الف) $x^x \geq 0$ $x \leq 2, 5-3x$ $x-4 \geq 0 \Rightarrow x \geq 4$

$D_f = (-\infty, -2] \cup [2, +\infty)$



ب) $x-1 \geq 0$ $x \geq 1$

$\sqrt{y+1} = 3 - \sqrt{x-1}$

$3 - \sqrt{x-1} \geq 0$

$\sqrt{x-1} \leq 3$

$x-1 \leq 9$
 $x \leq 10$

$D_f = [1, 10]$

سوال 13
الف) $x^2 - x - 2 > 0$ $(x-2)(x+1) > 0$



$x^2 - 1 \geq 0$ $x \geq 1$ $x \leq -1$

$(-\infty, -1) \cup (2, +\infty)$

$D_f = (-\infty, -1) \cup (2, +\infty)$

سوال 14

سوال 14
 $3+a x - x^2 \geq 0$ $3+a x - x^2 \leq 0$

$-2b = \frac{3}{-1} = -3$

$b = \frac{3}{2}$ $-2 + \frac{3}{2} = a$ $a = -\frac{1}{2}$ $a+b = -\frac{1}{2} + \frac{3}{2} = 1$

سے طائی کثیف سی رہے بار بار دہرائے

سوال ۷

$$f(x) - x \geq 0 \quad f(x) = 3x - 2$$

$$3x - 2 - x \geq 0 \quad x \geq 1$$

$$f(x) = 2x + 3 \quad 2x + 3 - x \geq 0 \quad x \geq -3 \quad -3 \leq x < 1$$

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

سوال ۹

$$x = \frac{\sqrt{3}}{2} + 1 \quad f(x) = 2x^2 - 2x \quad 2\left(1 + \frac{\sqrt{3}}{2}\right)^2 - 2\left(1 + \frac{\sqrt{3}}{2}\right)$$

$$f\left(\sin\frac{\pi}{3} + \cos\frac{\pi}{3}\right) = \frac{1}{2}$$

$$\frac{\frac{a+1}{a-1} + 1}{\frac{a+1}{a-1} - 1} \Rightarrow \frac{2a}{2} = a \quad \checkmark$$

سوال ۱۷

$$a \neq 1 \quad D_f = \mathbb{R} - \{1\}$$

$$f(g(a)) = (\sqrt{a^2 - 1})^2 - 2\sqrt{a^2 - 1}$$

سوال ۱۸

$$t^2 - 2t = -1 \quad t^2 - 2t + 1 = 0 \quad (t-1)^2 = 0 \quad t = 1$$

$$\sqrt{a^2 - 1} = 1 \quad a^2 - 1 = 1 \quad a^2 = 2 \quad a = \pm\sqrt{2}$$

$$a = \pm\sqrt{2}$$

سوال ۹

$$x = -4 \Rightarrow f(-4) = 3(-4) + 3 + 4 = 1$$

$$x = 1 \Rightarrow f(1) = 1 - 1 + 4 = 4$$

$$f(1) \times f(-4) = 1 \times 4 = 4$$

سوال ۱۰

$$f(\cos^2 x + \sin^2 x) = 3 \Rightarrow 1 \cos^2 x + 1 \sin^2 x = 1 \Rightarrow 1 = 1$$

$$\cos^2 x = \frac{1}{2} \Rightarrow \cos x = \frac{1}{\sqrt{2}} \Rightarrow x = 45^\circ, 135^\circ$$

$$\cos x = \frac{1}{\sqrt{2}} \Rightarrow \cos x = \frac{1}{\sqrt{2}}$$

$$f(1, 0) = 3$$

$$f\left(\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}\right) = \left(\frac{\sqrt{2}}{2}\right)^2 + \left(\frac{\sqrt{2}}{2}\right)^2 = 1$$

$$\text{نصف ١) } \frac{x-1}{x} - \frac{x}{x-1} \geq 0 \rightarrow \frac{(x-1)^2 - x^2}{x(x-1)} \geq 0 \rightarrow \frac{-x_{n+1}}{x(x-1)} \geq 0$$

$$\begin{array}{c} \bullet \\ + \text{---} - \end{array} \quad \begin{array}{c} \frac{1}{x} \\ | \end{array} \quad \begin{array}{c} \bullet \\ + \text{---} - \end{array} \quad \rightarrow \quad D_f = (-\infty, 0) \cup \left[\frac{1}{x}, 1\right)$$