

$$x\sqrt{x} \cdot ? = \sqrt{x} \cdot x \cdot ? = \sqrt{x} \cdot x \cdot ? = -x \rightarrow$$

17, 8

نام و نام خانوادگی: پاسنامه تشریحی تکلیف شماره: کلاس: C

$$2x^2 + y^2 - 4x + 4y + k = 0$$

$$\hookrightarrow (y+2)^2 + (x\sqrt{2}-\sqrt{2})^2 = 0$$

$$\hookrightarrow k = 9 + 2 \text{ (11)}$$

✓ (5)

$$f = \begin{cases} x^2 + 4x & , x \geq a \\ 2x + a + 2 & , x \leq a \end{cases}$$

$$a^2 + 4a = 2a + a + 2$$

$$\rightarrow a^2 + a - 2 = 0$$

$$(a+2)(a-1) = 0$$

$$\begin{cases} a = -2 \\ a = +1 \end{cases} \checkmark$$

$$f(1) = 2$$

$$f(x) = \begin{cases} 2x + b & , |x+1| \geq 2 \rightarrow \begin{cases} x+1 \geq 2, x \geq 1 \\ x+1 \leq -2, x \leq -3 \end{cases} \\ a + 2x & , -3 \leq x \leq -1 \end{cases}$$

$$\rightarrow \begin{cases} 2-b = a+2 \\ a+b = 0 \end{cases}$$

$$a+b=0 \quad 11-b=a-4 \rightarrow a+b=14$$

$$y = \sqrt{x-a} + \sqrt{b-2x} \rightarrow D_f = \{x\} \rightarrow \begin{cases} 4x-a \geq 0 \rightarrow 4x \geq a \rightarrow x \geq \frac{a}{4} \\ b-2x \geq 0 \rightarrow b \geq 2x \rightarrow \frac{b}{2} \geq x \rightarrow \boxed{b=4} \end{cases}$$

$$\frac{b}{a} = 9 \left(\frac{1}{2} \right)$$

ریشه در مطلق

$$y = \sqrt{\frac{x+1}{1x-3}} + \sqrt{\frac{4-x}{x^2+2x+5}} \rightarrow \begin{cases} \text{① } \frac{-1}{+1} \rightarrow \frac{1}{1} \\ \text{② } \frac{4}{+1} \rightarrow \frac{4}{1} \end{cases}$$

$$D_f = [-1, 4] \cup (-\infty, -1]$$

$$y = \sqrt{x-5} + \sqrt{2-x} \rightarrow \begin{cases} x-5 \geq 0 \rightarrow x \geq 5 \\ 2-x \geq 0 \rightarrow x \leq 2 \end{cases} \rightarrow D_f = \emptyset$$

$$y \geq 2[x] \rightarrow 3 > x \rightarrow D_f = \emptyset$$

$$D_f = \mathbb{R} \setminus [-3, 2]$$

$$D_f = (-\infty, -3) \cup (-2, 1) \cup (1, 3) \cup (3, +\infty)$$

$$1) \sqrt{\frac{x^2 - x - 4}{x^2 - 13x^2 + 14}} = \sqrt{\frac{(x-3)(x+2)}{(x^2-9)(x^2-1)}} = \sqrt{\frac{(x-3)(x+2)}{(x-3)(x+3)(x-1)(x+1)}}$$

$$2) \sqrt{\frac{x^2 - 2x^2 - 2x + 4}{x^2 + 2x^2 - 2x - 4}} = \frac{(x-1)(x-3)(x+2)}{(x+1)(x+3)(x-2)}$$

$$y = \sqrt{[-x] - 2} \rightarrow [-x] - 2 \geq 0 \rightarrow [-x] \geq 2 \rightarrow -x \geq 2 \rightarrow x \leq -2 \rightarrow (-\infty, -2]$$

$$y = \frac{2x+4}{[x]^2 - 2[x] - 3} \rightarrow ([x]-3)([x]+1) \rightarrow [x] \neq 3 \rightarrow (-\infty, 3) \cup (3, +\infty)$$

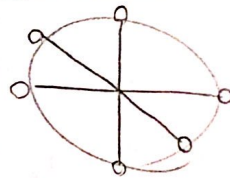
$$[x] \neq -1 \rightarrow (-1, 0) \cup (0, +\infty)$$

$$\rightarrow \mathbb{R} \setminus \{3, -1\} \cup [-1, 0]$$

$$y = \frac{\cot x + 1}{\tan x + 1} \rightarrow \sin x \neq 0$$

$$\cos x \neq 0$$

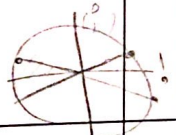
$$\tan x \neq (-1)$$



$$\mathbb{R} \setminus \left\{ k\pi, k\pi + \frac{\pi}{2} \right\}$$

$$\rightarrow \mathbb{R} = \left\{ k\pi \pm \frac{\pi}{2} \right\}$$

$$y = \sqrt{1 - \sin^2 x} \rightarrow 1 - \sin^2 x \geq 0 \rightarrow \frac{1}{2} \geq \sin^2 x \rightarrow \frac{1}{\sqrt{2}} \geq \sin x \geq -\frac{1}{\sqrt{2}}$$



$$\sqrt{1 - \log^2 x - 1} \rightarrow 1 \geq \log^2 x - 1 \rightarrow x - 1 \leq \frac{1}{x} \rightarrow x \leq \frac{1}{x-1}$$

$$x - 1 > 0 \rightarrow x > 1 \rightarrow D_f = (1, 1/2]$$

$$D_f = (-\infty, 0] \cup [3, +\infty) \setminus \{1, 2\}$$

$$\sqrt{\frac{x^2 - x}{1 - \log^2 x - 1}} \rightarrow \frac{x^2 - x}{1 - \log^2 x - 1} \geq 0 \rightarrow \frac{x(x-1)}{1 - \log^2 x - 1} \geq 0$$

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

$$y = \sqrt{\frac{x^2 - x^2}{x^2 - x^2}} \rightarrow x^2 - x^2 \geq 0 \rightarrow x^2 - x^2 \geq 0 \rightarrow x^2 - x^2 \geq 0$$

$$D_f = [1, 3]$$

$$y = \left(\frac{3x+2}{x+1} \right)! \rightarrow \frac{3x+2}{x+1} \in \mathbb{N} \rightarrow x \in \mathbb{N}$$

$$\{x | x = -\frac{3k-2}{3k+1} \mid k \in \mathbb{N}\}$$