

۱۸, ۵

نام و نام خانوادگی: شماره: کلاس: نام: A	پاسخنامه تشریحی تکلیف شماره ۴
الف) $y = \sqrt{4 - \sqrt{2-x}} \Rightarrow 2-x \geq 0 \rightarrow x \leq 2$ $4 - \sqrt{2-x} \geq 0 \Rightarrow \sqrt{2-x} \leq 4 \rightarrow 2-x \leq 14 \rightarrow x \geq -12$ $D_f = [-12, 2]$ ب) $y = \sqrt{3 - \sqrt{x-2}} \Rightarrow x-2 \geq 0 \rightarrow x \geq 2$ $3 - \sqrt{x-2} \geq 0 \Rightarrow \sqrt{x-2} \leq 3 \rightarrow x-2 \leq 9 \rightarrow x \leq 11$ $D_f = [2, 11]$	۱, ۵ ۱, ۵
الف) $y = \sqrt{4 - 2x^2} \Rightarrow 4 - 2x^2 \geq 0 \rightarrow 2x^2 \leq 4 \rightarrow x^2 \leq 2 \rightarrow x \leq \pm\sqrt{2}$ $D_f = (-\infty, -\sqrt{2}] \cup [\sqrt{2}, +\infty)$ ب) $y = \sqrt{3 x - 9} \Rightarrow 3 x - 9 \geq 0 \rightarrow x \geq 3 \rightarrow D_f = (-\infty, -3] \cup [3, +\infty)$	۱, ۵ ۱, ۵
الف) $y = \sqrt[3]{\frac{ x +1}{ x -3}} \Rightarrow \frac{ x +1}{ x -3} \Rightarrow x -3 \neq 0 \rightarrow x \neq 3$ $x \neq \pm 3$ $D_f = \mathbb{R} - \{-3, 3\}$ ب) $y = \sqrt[3]{\frac{\sqrt{x+1}}{\sqrt{x-3}}} \Rightarrow \frac{\sqrt{x+1}}{\sqrt{x-3}} \Rightarrow x \geq 0$ $\sqrt{x-3} \neq 0 \rightarrow x \neq 3$ $D_f = [0, +\infty) - \{3\}$	۳ ۳
الف) $y = \frac{\sqrt{3- x }}{ x +2} \Rightarrow 3- x \geq 0 \rightarrow x \leq 3 \rightarrow x \leq 3, x \geq -3$ $x +2 \neq 0 \rightarrow x \neq -2 \rightarrow x = 1R \rightarrow D_f = [-3, 3]$ ب) $y = \frac{\sqrt{4-x^2}}{ x -1} \Rightarrow 4-x^2 \geq 0 \rightarrow x^2 \leq 4 \rightarrow x \leq 2, x \geq -2$ $x -1 \neq 0 \rightarrow x \neq 1 \rightarrow x \neq 1, -1 \rightarrow D_f = [-2, 2] - \{1, -1\}$	۴ ۴
الف) $y = \frac{x+1}{\sqrt{x+ x }} \Rightarrow x+ x > 0 \rightarrow x \neq -x \rightarrow x > 0$ $D_f = (0, +\infty)$ ب) $y = \frac{1}{\sqrt{x x }} \Rightarrow x x > 0 \rightarrow x > 0$ $D_f = (0, +\infty)$	۵ ۵

$$y = \sqrt{2-x} \Rightarrow 2-x \geq 0 \rightarrow [x] \leq 2 \rightarrow x < 3$$

(الف)

$$D_f = (-\infty, 3)$$

(ب)

$$y = \frac{1}{\sqrt{2-x}} \Rightarrow 2-x > 0 \rightarrow [x] < 2 \rightarrow x < 3$$

$$D_f = (-\infty, 2)$$

$$y = \frac{1}{x[x]} \Rightarrow x[x] \neq 0 \rightarrow [x] \neq 0 \rightarrow D_f = \mathbb{R} - [0, 1)$$

(الف)

(ب)

$$y = \frac{1}{\sqrt{-x[x]}} \Rightarrow -x[x] \geq 0 \rightarrow D_f = \emptyset$$

(-2)

$$y = \sqrt{[x-\frac{1}{x}] + [x+\frac{1}{x}]} \Rightarrow [x-\frac{1}{x}] + [x+\frac{1}{x}] \geq 0 \rightarrow [x+\frac{1}{x}-1] + [x+\frac{1}{x}] \geq 0 \rightarrow 2[x+\frac{1}{x}] - 1 \geq 0$$

$$\rightarrow [x+\frac{1}{x}] \geq \frac{1}{2} \rightarrow x+\frac{1}{x} \geq 1 \rightarrow x \geq \frac{1}{x} \rightarrow D_f = [\frac{1}{x}, +\infty)$$

$$y = \sqrt{[x-\frac{1}{x}] + [\frac{1}{x}-x]} \Rightarrow [x-\frac{1}{x}] + [\frac{1}{x}-x] \geq 0 \rightarrow [x-\frac{1}{x}] + [-(x-\frac{1}{x})] \stackrel{a \in \mathbb{Z}}{\geq} [a] + [-a] = 0$$

$$\rightarrow x = z + \frac{1}{x} \rightarrow D_f = \{x / x = k + \frac{1}{x}, k \in \mathbb{Z}\}$$

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

$$D_f = \mathbb{R} - \{2k\pi + \frac{\pi}{2}, 2k\pi + \frac{3\pi}{2}, 2k\pi + \frac{5\pi}{2}, 2k\pi + \frac{7\pi}{2}\}$$

$$\leftarrow x \neq \pm 45^\circ, 135^\circ, 225^\circ, 315^\circ$$



$$y = \frac{\cot x + 1}{\tan x + 1} \Rightarrow \tan x + 1 \neq 0 \rightarrow \tan x \neq -1 \rightarrow x \neq 135^\circ, 315^\circ \rightarrow D_f = \mathbb{R} - \{2k\pi + \frac{3\pi}{4}, 2k\pi + \frac{7\pi}{4}\}$$

$$D_f = \mathbb{R} - \{2k\pi + \frac{3\pi}{4}, 2k\pi + \frac{7\pi}{4}\}$$

$$y = \sqrt{1-\cos x} \Rightarrow 1-\cos x \geq 0 \rightarrow \cos x \leq \frac{1}{2}$$

$$\rightarrow 120^\circ \leq x \leq 240^\circ \rightarrow D_f = [2k\pi + \frac{2\pi}{3}, 2k\pi + \frac{4\pi}{3}]$$



$$y = \sqrt{1-\cos x} \Rightarrow 1-\cos x \geq 0 \rightarrow \cos x \leq \frac{1}{2}$$

$$\rightarrow 120^\circ \leq x \leq 240^\circ \rightarrow D_f = [2k\pi + \frac{2\pi}{3}, 2k\pi + \frac{4\pi}{3}]$$

