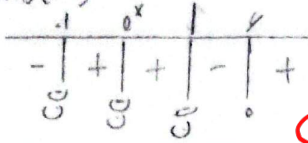


مسئله ۱

الف

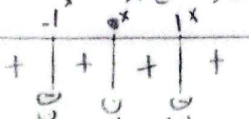
$$\sqrt{x(x-2)}$$



$$D_f = (-1, 0) \cup (1, 2) \cup [2, \infty)$$

✓

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



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

۱

الف $x + |x| > 0$

$$D_f = \mathbb{R}^+$$

ب $x|x| > 0$

$$D_f = \mathbb{R}^+$$

✓

۲

الف

$$y - [x] > 0$$

$$[x] \leq y$$

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

ب

$$y - [x] > 0$$

$$[x] < y$$

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

✓

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الف

$$\sqrt{[x - \frac{1}{p}] + 1 + [x + \frac{y}{p}] - 1}$$

$$y[x + \frac{y}{p}] - 1 \geq 0$$

$$y[x + \frac{y}{p}] \geq 1$$

$$[x + \frac{y}{p}] \geq \frac{1}{y}$$

$$x + \frac{y}{p} \geq 1$$

$$x \geq \frac{1}{p}$$

$$D_f = [\frac{1}{p}, \infty)$$

$$[x + \frac{y}{p}] \geq 1$$

ب

$$\sqrt{[x - \frac{1}{p}] + [- (x - \frac{1}{p})]}$$

$$D_f = [x = k + \frac{1}{p} \text{ و } k \in \mathbb{Z}]$$

✓

۴

الف $\sin x \neq 1$

$$D_f = \mathbb{R} - [2k\pi + \frac{\pi}{2}]$$

ب

$$y \sin^2 x \neq 1$$

$$\sin x \neq \pm \frac{1}{\sqrt{y}}$$

$$\sin x \neq \pm \frac{\sqrt{y}}{y}$$

$$D_f = \mathbb{R} - [k\pi \pm \frac{\pi}{2}]$$

✓

۵

$\sin x \geq 0$ $\sin x \geq 1$ $\sin x \geq \frac{1}{2}$ $D_f = \left[\sin x + \frac{\pi}{2}, \sin x + \frac{3\pi}{2} \right]$	$\cos x \geq 0$ $\cos x \geq 1$ $D_f = [\sin x]$	6
$-1 \leq x \leq 1$ $2 \leq x \leq 4$ $D_f = \begin{cases} 2 \leq x \leq 4 \\ -2 \leq x \leq -4 \end{cases}$	$-1 \leq x^2 + y^2 \leq 1$ $x^2 + y^2 \leq 0$ $x^2 + y^2 \geq 0$ $(x+y)(x-1) \geq 0$ $D_f = [-y, -x] \cup [0, 0]$	7
$x - y > 0$ $x > y$ $y - \log_w(x-y) > 0$ $\log_w x \leq y$ $x - y \leq 9$ $x \leq 11$	$x^2 - x > 0$ $x(x-1)(x+1) > 0$ $(-1, 0) \cup (1, \infty)$	8
$x + 1 \neq 0$ $x \neq -1$ $D_f = \mathbb{R}$	$x - 1 \neq 0$ $x \neq 1$ $x \neq 0$ $D_f = \mathbb{R} - [0]$	9
$x \neq y$ $x \neq \frac{1}{y}$ $D_f = \mathbb{R} - \left[\frac{1}{y} \right]$	$x \cdot y \neq 0$ $x \neq y$ $D_f = \mathbb{R} - \left[\log_w \frac{y}{x} \right]$	
$x + 1 \in W$ $x \in W - 1$ $x \in \frac{W-1}{x}$ $D_f = \left[x = \frac{k-1}{x}, k \in W \right]$	$\frac{y(x-y)}{y(x-w)} \in W$ $D_f = \left[x = \frac{w-1}{y}, k \in W \right]$	10