

انف) $y = \sqrt{x^2-1} + \sqrt{x-2} \rightarrow \left\{ \begin{array}{l} x^2-1 \geq 0 \rightarrow x \leq -1 \vee x \geq 1 \\ x-2 \geq 0 \rightarrow x \geq 2 \end{array} \right\} \rightarrow (1, \infty, -1] \cup [1, +\infty) \cap [2, +\infty) = [2, +\infty) \Rightarrow \text{Df} = [2, +\infty)$

$$\div) y = \frac{\sqrt{7-3x}}{\sqrt{7x-3}} \rightarrow \left\{ \begin{array}{l} 7-3x \geq 0 \rightarrow x \leq \frac{7}{3} \\ 7x-3 > 0 \rightarrow x > \frac{1}{7} \end{array} \right\} \xrightarrow{n} x \in (\frac{1}{7}, \frac{7}{3}] \rightarrow Df = (\frac{1}{7}, \frac{7}{3}]$$

$$y = \sqrt{7x-a} + \sqrt{b-3x} \quad D_y = \{x\} \rightarrow \left\{ \begin{array}{l} 7x-a \geq 0 \rightarrow x \geq \frac{a}{7} \\ b-3x \geq 0 \rightarrow x \leq \frac{b}{3} \end{array} \right\} \xrightarrow{\cap} D_y = \left[\frac{a}{7}, \frac{b}{3} \right]$$

$$\left. \begin{aligned} \frac{a}{1} &= 12 \Rightarrow a = 12 \\ \frac{b}{12} &= 1 \Rightarrow b = 12 \end{aligned} \right\} \Rightarrow \frac{b}{a} = \frac{12}{12} = 1$$

صفوحۃ بن ہادی عبد ربہ بن ابی ہریرۃ

$$\text{الف) } y = \sqrt{\frac{x^2 - x - 7}{x^4 - 13x^2 + 36}} \rightarrow \frac{x^2 - x - 7}{x^4 - 13x^2 + 36} \geq 0 \rightarrow \frac{(x-3)(x+2)}{(x^2-9)(x^2-4)} \geq 0 \rightarrow \frac{-3}{+4} \frac{-2}{-4} \frac{+2}{-4} \frac{+3}{+4}$$

$\Rightarrow D_y = (-\infty, -3) \cup (3, +\infty)$ صفرات بر $x^3 - 2x^2 - 5x + 7$
 حدن مجموع ضرایب مرتب $\rightarrow \frac{x^3 - 2x^2 - 5x + 7}{x^3 + 2x^2 - 5x - 7} \geq 0 \rightarrow \frac{(x-1)(x^2-x-7)}{(x+1)(x^2+x-7)} \geq 0$
 چون مجموع ضرایب با توان فرد و زوج معرف در مرتبه $x+1$ و $x-1$ به ترتیب

$$\frac{(x-1)(x-3)(x+2)}{(x+1)(x+3)(x-2)} \geq 0 \rightarrow \frac{-3 \quad -2 \quad -1 \quad 1 \quad 2 \quad 3}{+ \quad - \quad + \quad - \quad + \quad -} \Rightarrow D_y = (-\infty, -3) \cup (-2, +\infty) \cup (1, 2)$$

الف) $y = \sqrt{2[x] - 1} \rightarrow 2[x] \geq 1 \rightarrow [x] \geq \frac{1}{2} \Rightarrow x \geq \frac{1}{2} \rightarrow D_y = [\frac{1}{2}, +\infty)$

ب) $y = \sqrt{r[x] - a} \rightarrow r[x] - a \geq 0 \rightarrow r[x] \geq a \rightarrow [x] \geq \frac{a}{r} \Rightarrow x \geq \frac{a}{r} \rightarrow Dy = [\frac{a}{r}, +\infty)$

الف) $y = \sqrt{\frac{x+1}{|x-3|}} + \sqrt{\frac{7-x}{x^2+2x+4}} \rightarrow \left\{ \begin{array}{l} \frac{x+1}{|x-3|} \geq 0 \rightarrow \frac{-1}{|x-3|} + \rightarrow x \in [-1, 3) \cup (3, +\infty) \\ \frac{7-x}{x^2+2x+4} \geq 0 \rightarrow 7-x \geq 0 \Rightarrow x \leq 7 \end{array} \right\} \xrightarrow{\cap} D_y = [-1, 3) \cup (3, 7]$

ب) $y = \sqrt{[x]-4} + \sqrt{4-[x]} \rightarrow \left\{ \begin{array}{l} [x]-4 \geq 0 \rightarrow [x] \geq 4 \rightarrow x \geq 4 \\ 4-[x] \geq 0 \rightarrow [x] \leq 4 \rightarrow x \leq 4 \end{array} \right\} \xrightarrow{\cap} D_y = \{4\}$