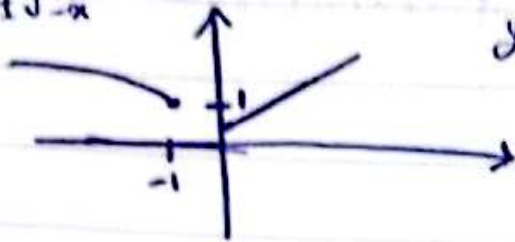


شماره ۲

مسائل ریاضی راد دوازدهم پسر A

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



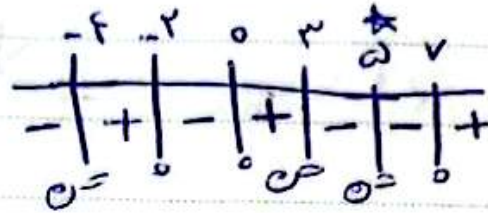
$$y = \frac{x}{2} + \frac{1}{2}$$

۱- آره تابع هست

$$x \neq f(x-2)$$

$$f(x)$$

$$\rightarrow -4, 2, 0$$

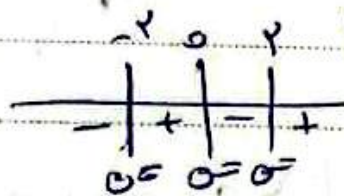


$$D_f = (-4, -2] \cup [0, 2) \cup [4, +\infty)$$

$$D_f = \mathbb{R} - \{0, \pm 2\} \quad \text{۳- الف)}$$

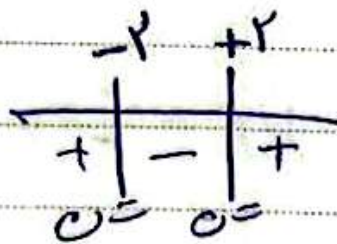
$$\Delta < 0 \quad \Delta > 0 \Rightarrow \boxed{+}$$

$$\frac{x^2 - 2x + 2}{x(x+2)(x-2)} \geq 0$$



$$D = (-2, 0) \cup (2, +\infty) \quad \text{۴- الف)}$$

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



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

$$f = 2[-x] \Rightarrow [-x] \leq 2 \Rightarrow 2 \leq -x < 2$$

$$\Rightarrow -2 < x \leq -2 \Rightarrow D_f = \mathbb{R} - [-2, -2]$$

$$|x| + x > 0 \Rightarrow x \in \mathbb{R}^+ \quad I \quad \text{الف-1}$$

$$x(x-1)(x+1) \geq 0 \Rightarrow x \in [-1, 0] \cup [1, +\infty) \quad II$$

$$D_f = \underline{I \cap II = [1, +\infty)}$$

$$x \neq \pm 1 \quad I$$

$$|x-2| \geq x^2 \Rightarrow x \in [-2, 1] \quad II$$

$$D_f \subseteq I \cap II = [-2, -1) \cup (-1, 1)$$

$$(x-2)[x-2] \geq 0 \Rightarrow [x] \geq 2$$

$\mathbb{R} = D_f$ الف-2

$$|x-1| [x-2] \geq 0 \Rightarrow [x] \geq 2$$

صوابه تحقق

$$\Rightarrow D_f = [2, +\infty)$$

$$||x-2|-1| \leq k$$

حقیقه k

$$|x-2|-1 \leq k \Rightarrow x-2 \leq k+1$$

$$|x-2|-1 \geq -k \Rightarrow x-2 \geq -1-k$$

$$|x-2|-1 \leq -k \Rightarrow x-2 \leq 1-k$$

$$|x-2|-1 \geq k \Rightarrow x-2 \geq k-1$$

$K-1 \leq K+1 \times \quad K-1 \leq -1-K \Rightarrow K \leq 0 \times$

$K-1 \leq 1-K \rightarrow K \leq 1 \checkmark \quad 1-K \leq K+1 \times$

$K \leq 1$

$$D_f = \mathbb{R} - \{\pm 1, -1\} \Rightarrow n \leq 3$$

مسئله ۱

$$x^2 - 4x + 9 = 0 \rightarrow (x-2)^2 = 0 \Leftrightarrow x = 2$$

$$\left. \begin{array}{l} x > 0 \quad x \neq 1 \\ x > -1 \quad x \neq 0 \end{array} \right\} \xrightarrow{n} \underline{D_f = \mathbb{R}^+ - \{1\}}$$

۹

$$-1 \leq \sqrt{x^2} - 1 \leq 1 \Rightarrow \underbrace{-1 \leq \sqrt{x^2} \leq 1}_{\checkmark}$$

۱۰

$$0 \leq \sqrt{x^2} \leq 1 \rightarrow 0 \leq x^2 \leq 1 \Rightarrow x \in \left[-\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}} \right]$$