

۲. انہیں علی دلائل میں ہسٹہ ت

نام و نام خانوادگی پانچنامہ تشریحی تکلیف شماره ۷ کلاس یازدهم سیر A	
$f(x) = \sqrt{x-2} + 2\sqrt{x-2} + 2 = \sqrt{(\sqrt{x-2} + 2)^2} = \sqrt{x-2} + 2 = \sqrt{x-2} + 2$ $g(x) = \sqrt{x-2} - 2\sqrt{x-2} + 2 = \sqrt{(\sqrt{x-2} - 2)^2} = \sqrt{x-2} - 2 \xrightarrow{x \geq 2} g(x) = \sqrt{x-2} - 2$ $\Rightarrow f(x) + g(x) = \sqrt{x-2} + 2 + \sqrt{x-2} - 2 = 0 + 2\sqrt{x-2} = \begin{cases} a=0 \\ b=2 \\ c=-2 \end{cases}$ $\Rightarrow \frac{a+b}{c} = \frac{0+2}{-2} = -1 \leftarrow \text{سج}$	1
$D_f = \mathbb{R} - \{1, 2\} \quad \Leftrightarrow x \neq \frac{1}{2} \Leftrightarrow x^2 - 2x + 1 \neq 0$ $D_g = \{2, 1, 2, 0\} \quad D_{\frac{g}{f}} = D_f \cap D_g - \left\{ \frac{2}{f(x) \neq 0} \right\} \Rightarrow D_{\frac{g}{f}} = \{2, 0\}$ $\Rightarrow \left(\frac{g}{f} \right)(x) = \left\{ \left(\frac{2}{-2} \right), \left(0, \frac{2}{\frac{1}{2}} \right) \right\} \leftarrow \text{سج}$	2
الف) $2x = D_f \Rightarrow$ هر عضو از $D_f \Rightarrow f(2x) = \left\{ \left(\frac{1}{2}, 2 \right), \left(\frac{3}{2}, -1 \right), (2, 2), \left(-\frac{1}{2}, 4 \right) \right\}$ ب) $x^2 = D_f \Rightarrow$ هر عضو از $D_f \Rightarrow f(x^2) = \left\{ (1, 2), (-1, 2), (\sqrt{2}, -1), (-\sqrt{2}, -1), (2, 2), (-2, 2) \right\}$ ج) $2g(x) + 1 = \left\{ (-2, 19), (1, 3), (3, 9), (2, 1) \right\}$ د) $g(x) \neq 0 \Rightarrow \left(\frac{2f}{g} \right)(x) = \left\{ (1, -2), (3, -1), \left(-\frac{1}{2}, 4 \right) \right\}$	3
$h(x) = \left\{ (2, 2+3), (-2, 2+4), (3, 2+3) \right\}$ $\Rightarrow h(x) = \left\{ (2, 5), (-2, 6), (3, 5) \right\}$	4
$f(x) = \frac{\sqrt{2x} - x}{x-2} \quad \left\{ \begin{array}{l} x \neq 2 \\ x \geq 0 \end{array} \right\} \quad \sqrt{2x} - x \geq 0 \Rightarrow \sqrt{2x} \geq x \Rightarrow 2x \geq x^2 \Rightarrow x^2 - 2x \leq 0$ $\Rightarrow D_f = [0, 2) \cup (2, 3] \quad (B)$ $D_g = \mathbb{R} \quad g+1 \neq 0 \Rightarrow [x] + [-x] + 1 \neq 0 \Rightarrow [x] + [-x] \neq -1 \Rightarrow x \in \mathbb{Z} \quad (A)$ $D_{\frac{f}{g+1}} = B \cap A = \{0, 1, 3\} \leftarrow \text{سج}$	5

$$-x^2 + 2x - 1 \geq 0 \Rightarrow x \leq 1 \Rightarrow D_f = [1, 1]$$

$$g(x) = 0 \Rightarrow h(x) = \left\{ \left(1, \frac{0}{1}\right) \left(1, \frac{\sqrt{1}}{1}\right) \left(1, \frac{0}{1}\right) \right\}$$

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$$\text{الف) } y = x^2 - 2x + 1 \Rightarrow y = (x-1)^2 + 1 \Rightarrow y-1 = (x-1)^2 \\ \Rightarrow \sqrt{y-1} = x-1 \Rightarrow \sqrt{y-1} + 1 = x \Rightarrow y-1 \in \mathbb{R} = \mathbb{R}_f = \mathbb{R}$$

$$\text{ب) } yx^2 - 2yx = 1 \Rightarrow yx^2 - 2yx - 1 = 0 \quad x = \frac{2y \pm \sqrt{4y^2 + 4y}}{2y} \\ (y \neq 0) \quad 4y^2 + 4y \geq 0 \Rightarrow y^2 + y \geq 0 \Rightarrow y \in (-1, 0] \Rightarrow \mathbb{R}_f = \mathbb{R} - (-1, 0]$$

$$\text{الف) } \frac{-b}{2a} = \frac{1}{2} = 1 \Rightarrow y_{\min} = 1 - 1 + 1 = 1 \Rightarrow \mathbb{R}_f = [1, +\infty)$$

$$\text{ب) } \frac{-b}{2a} = \frac{-1}{-2} = 1 \Rightarrow y_{\min} = -1 + 1 + 1 = 1 \Rightarrow \mathbb{R}_f = [1, +\infty)$$

$$\text{ج) } \frac{-b}{2a} = 1 \Rightarrow y_{\min} = 1 - 1 - 1 = -1 \Rightarrow \mathbb{R}_f = [-1, +\infty) \Rightarrow \mathbb{R}_f = [0, +\infty)$$

$$\text{د) } \frac{-b}{2a} = 2 \Rightarrow y_{\min} = -1 + 4 = 3 \Rightarrow \mathbb{R}_f = [3, +\infty) \Rightarrow \mathbb{R}_f = [0, 3]$$

$$\text{الف) } \text{بزرگترین مقدار ندارد} \Rightarrow \mathbb{R}_f = \mathbb{R} \quad \text{ب) } \text{بزرگترین مقدار ندارد} \Rightarrow \mathbb{R}_f = \mathbb{R}$$

$$\text{ج) } \mathbb{R}_f = \sqrt{\mathbb{R}} \Rightarrow \mathbb{R}_f = [0, +\infty)$$

$$\text{د) } \mathbb{R}_f = (\mathbb{R})^2 \Rightarrow \mathbb{R}_f = [0, +\infty)$$

$$\text{الف) } \mathbb{R}_f = \mathbb{R} - \left\{ \frac{a}{c} \right\} \Rightarrow \mathbb{R}_f = \mathbb{R} - \{1\}$$

$$\text{ب) } \mathbb{R}_f = \mathbb{R} - \left\{ \frac{a}{c} \right\} \Rightarrow \mathbb{R}_f = \mathbb{R} - \{1\}$$