

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۵ کلاس: یازدهم سپهر اندیشه

$$f(x) + g(x) = A \Rightarrow f(x) \cdot g(x) : \sqrt{x+2}\sqrt{x-2} - \sqrt{x-2}\sqrt{x-2} = A$$

$$A^2 = x+2\sqrt{x-2} + x-2\sqrt{x-2} \Rightarrow 2\sqrt{(x+2)\sqrt{x-2}}(x-2\sqrt{x-2})$$

$$2x+2\sqrt{x^2-4(x-2)} = 2(x+\sqrt{(x-2)^2}) = 2(x+|x-2|)$$

$$2(2x-2) = 4(x-2) = A^2 \Rightarrow A = \sqrt{4(x-2)} = 2\sqrt{x-2}$$

$$\Rightarrow a=0, b=2, c=-2 \quad \frac{a+b}{c} = \frac{0+2}{-2} = -\frac{1}{1}$$

$$\frac{g}{f} \Rightarrow \left\{ \begin{pmatrix} 2 \\ -\frac{1}{2} \end{pmatrix} \begin{pmatrix} 1 \\ 0 \end{pmatrix} \begin{pmatrix} 2 \\ 0 \end{pmatrix} \begin{pmatrix} 0 \\ \frac{2x^4}{x} \end{pmatrix} \right\}$$

$$\Rightarrow \frac{g}{f} = \left\{ \begin{pmatrix} 2 \\ -\frac{1}{2} \end{pmatrix} \begin{pmatrix} 0 \\ 4 \end{pmatrix} \right\}$$

$$\text{الف) } (2x) \Rightarrow \left\{ \left(\frac{1}{2}, 2\right) \left(\frac{2}{2}, -1\right) (2, 2) \left(-\frac{1}{2}, 4\right) \right\}$$

$$\text{ب) } (x^2) \Rightarrow \left\{ (1, 2) (\sqrt{2}, -1) (-\sqrt{2}, -1) (2, 2) (-2, 2) \right\}$$

$$\text{ج) } 2g^2(x)+1 \Rightarrow \left\{ (-2, 19) (1, 2) (2, 9) (-1, 1) \right\}$$

$$\text{د) } \frac{2f}{g} \Rightarrow \left\{ (1, -4) (3, -1) \begin{pmatrix} -1 \\ 2 \end{pmatrix} \right\}$$

$$h = \left\{ (1, 5) (-2, 4) (2, 5) \right\}$$

$$D_{f \cdot g} = D_f \cap D_g = \{2, 2, -2\}$$

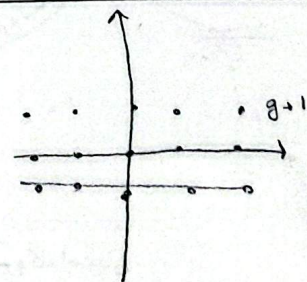
$$D^3x > 0 \quad (2) \quad x-2 \neq 0 \quad x \neq 2 \Rightarrow 0 \leq x \leq 2 - \{2\}$$

$$1. \sqrt{3x-1} > 0 \quad x^2 \leq 2x$$

$$D\left(\frac{f}{g+1}\right) = D_f \cap D(g+1) = \{R - R\} - \{2\}$$

$$\hookrightarrow D\left(\frac{f}{g+1}\right) = \{x | x \in R, 0 \leq x \leq 2\}$$

$$\hookrightarrow x \in \{0, 1, 2\}$$



$h(x) = \frac{\sqrt{ax - x^2 - r}}{g(x)} \Rightarrow ax - x^2 - r \geq 0 \Rightarrow -x^2 + ax - r \geq 0$ $D_f = [1, 4] \quad D_g = \{1, r, r, a\}$ $\Rightarrow h(x) = \left\{ (1, 0), \left(r, \frac{\sqrt{r}}{r}\right), (4, 0) \right\}$	6
الف) $y = x^3 - 2x^2 + 2x - 1 + 1 \Rightarrow (x-1)^3 = y - 1 \Rightarrow x - 1 = \sqrt[3]{y-1}$ $x = 1 + \sqrt[3]{y-1} \quad R_f = \mathbb{R}$ ب) $y = x^2 - 2x = -1 \Rightarrow 2y \neq \sqrt{4y - 4y} = 1 + \frac{\sqrt{y^2 + y}}{y} \quad y^2 \cdot y \geq 0$ $y \geq 0 \quad y > 0 \quad y < -1 \quad R_f = (-\infty, -1] \cup (0, \infty) \quad y(y+1) \geq 0$	7
الف) $x^2 - 2x + 1 = 0 \Rightarrow g(x-1)^2 + y \quad R = [0, +\infty)$ ب) $y = -x^2 + 2x + 3 \Rightarrow - \quad R_f \in (-\infty, 1^2]$ ج) $y = x^2 - 2x - 3 \Rightarrow y = x^2 - 2x + 1 - 4 \Rightarrow y = (x-1)^2 - 4 \Rightarrow R_f = [-4, +\infty)$ د) $y = \sqrt{2x + x^2} \quad R_f = [0, 4]$	8
الف) 1^2 ب) $\mathbb{R}$ ج) $[0, +\infty)$ د) $[0, +\infty)$	9
الف) $R_f = \mathbb{R} - [r]$ ب) $R_f = \mathbb{R} - [r]$	10