

نام و نام خانوادگی سید پوریا پاسخنامه تشریحی تکلیف شماره ۷ ... کلاس یازدهم A

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

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

$$f(x)+g(x) = 2\sqrt{x-4} = 0 + 2\sqrt{x-4}$$

$\downarrow \quad \downarrow \quad \downarrow$
 $a \quad b \quad c$

$$\frac{a+b}{c} = \frac{0+2}{-4} = -\frac{1}{2}$$

$$x^2 - 4x + 3 \neq 0 \Rightarrow (x-1)(x-3) \neq 0 \Rightarrow \begin{cases} x \neq 3 \\ x \neq 1 \end{cases}$$

$$\frac{g}{f} \Rightarrow f \neq 0 \Rightarrow x \neq -2$$

$$D_{\frac{g}{f}} = \{2, 0\}$$

$$\frac{g}{f}(x) = \left\{ \left(2, -\frac{1}{4}\right), (0, 1) \right\}$$

الف) $f(1/x) = \left\{ \left(\frac{1}{4}, 2\right), \left(\frac{3}{4}, -1\right), (2, 2), \left(-\frac{1}{4}, 6\right) \right\}$ ب) $f(x^2) = \left\{ (1, 2), (-1, 2), \right.$
 $\left. (\sqrt{2}, 1), (-\sqrt{2}, -1), (2, 2), (-2, 2) \right\}$
 ج) $2g^2(x) + 1 = \left\{ (-2, 19), (3, 9), (1, 3), (-1, 1) \right\}$
 د) $\frac{2f}{g} = \left\{ (-1, 0), (1, -4), (3, 1) \right\}$

$h = \left\{ (-2, 6), (2, 5), (3, 4) \right\}$

دامدنی h ، مؤلفه‌های اول مشترک g و f است و برد h هم بر حسب $2f+g$ حساب می‌شود

$g(x)+1 = 1$ یا 0
 عدد خورده ای داشته و عدد منفی $\mathbb{Z}$ باشد $g(x) = -1$

$g(x)+1 \neq 0 \Rightarrow x \in \mathbb{Z} \Rightarrow g(x)+1 = 1$

$f(x) \rightarrow \begin{cases} x \neq 2 \\ x \geq 0 \end{cases}$

$\sqrt{3x-x} \geq 0 \Rightarrow \sqrt{2x} \geq x \Rightarrow 3x \geq x^2 \Rightarrow 3 \geq x \geq 0$

$\frac{f(x)}{g(x)+1} = \{0, 1, 3\}$

$$-x^r + \Delta x - r \geq 0 \Rightarrow x^r - \Delta x + r \leq 0 \Rightarrow (x-r)(x-1) \leq 0 \Rightarrow \begin{array}{c} -\infty \quad | \quad r \quad +\infty \\ + \quad 0 \quad - \quad 0 \quad + \end{array}$$

$$D_f = [1, r]$$

$$h(x) = \{(1, 0), (r, \frac{\sqrt{r}}{r}), (\cancel{r}, 0)\} \quad \text{D}$$

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$$\text{الف) } y = x^r - r x^r + r x \Rightarrow y = x^r - r x^r + r x - 1 + 1 \Rightarrow y = (x-1)^r + 1 \Rightarrow (x-1)^r = 1-y$$

$$\Rightarrow x-1 = \sqrt[r]{1-y} \Rightarrow x = \sqrt[r]{1-y} + 1 \rightarrow R_f = \mathbb{R} \quad \text{D}$$

$$\text{ب) } y = \frac{1}{x^r - r x} \Rightarrow y x^r - r y x = 1 \Rightarrow y x^r - r y x - 1 = 0 \quad x_1, x_2 = \frac{r y \pm \sqrt{r^2 y^2 + 4 y}}{2 y}$$

$$y \neq 0, r y^r + 4 y \geq 0 \Rightarrow y^r + y \geq 0 \Rightarrow 0 \leq y \text{ or } y \leq -1 \Rightarrow R_f = \mathbb{R} - (-1, 0] \quad \text{D}$$

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$$\text{الف) } a > 0 \Rightarrow [\min, +\infty) \rightarrow R_f \quad \frac{-b}{r a} = \frac{r}{r} = 1 \quad x = 1 \Rightarrow y = 1 \quad R_f = [1, +\infty) \quad \text{D}$$

$$\text{ب) } a < 0 \Rightarrow (-\infty, \max] \quad \frac{-b}{r a} = \frac{-r}{-r} = 1 \quad x = 1 \Rightarrow y = 1 \quad R_f = (-\infty, 1] \quad \text{D}$$

$$\text{ج) } a > 0 \Rightarrow [\min, +\infty) \quad \frac{-b}{r a} = \frac{r}{r} = 1 \quad x = 1 \Rightarrow y = -1 \quad R_f = \sqrt{[-1, +\infty)} = [0, +\infty) \quad \text{D}$$

$$\text{د) } a < 0 \Rightarrow (-\infty, \max] \quad \frac{-b}{r a} = \frac{-r}{-r} = 1 \quad x = 1 \Rightarrow y = 1 \quad R_f = \sqrt{(-\infty, 1]} = (0, 1] \quad \text{D}$$

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$$\text{الف) } R_f = \mathbb{R}$$

$$\text{ب) } R_f = \mathbb{R} \quad \text{D}$$

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

$$\text{د) } R_f = \mathbb{R}^r = [0, +\infty)$$

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$$\text{الف) } ad \neq bc, c \neq 0 \Rightarrow R_f = \mathbb{R} - \{r\} \quad \text{D}$$

$$\text{ب) } ad \neq bc, c \neq 0 \Rightarrow R_f = \mathbb{R} - \{1\} \quad \text{D}$$