

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۷... کلاس یازدهم B.

$$f(u) = \sqrt{u+2}\sqrt{u-2} \quad g(u) = \sqrt{u-2}\sqrt{u-2} \Rightarrow u \geq 2 \quad f(u)+g(u) = a+b\sqrt{u+c}$$

$$(f(u)+g(u))^2 = u+2\sqrt{u-2} + u-2\sqrt{u-2} + 2\sqrt{(u-2)(u-2)} \Rightarrow 2u+2\sqrt{u-2} - 14 \Rightarrow 2u-14$$

$$f(u)+g(u) = \sqrt{2u-14} = \sqrt{2(u-7)} = 2\sqrt{u-7}$$

$$2\sqrt{u-7} = a+b\sqrt{u+c} \Rightarrow \frac{a+b}{c} = \frac{0+2}{-2} = \left(\frac{-1}{1}\right)$$

۱

$$f(u) = \frac{u+2}{u^2-2u+2} \quad g(u) = \{(2,1)(1,0)(3,5)(0,2)\}$$

$$u=2 \rightarrow f(2) = \frac{4}{0} = \infty \quad u=3 \rightarrow f(3) = \frac{5}{0} = \infty \quad u=1 \rightarrow f(1) = \frac{3}{0} = \infty \quad u=0 \rightarrow f(0) = \frac{2}{2} = 1$$

۲

$$\frac{g}{f} = \{(2, \frac{1}{-2})(0, \frac{2}{2})\} \Rightarrow \{(2, -\frac{1}{2})(0, 1)\}$$

$$الف) f(2u) \rightarrow \{(\frac{1}{2}, 2)(\frac{3}{2}, -1)(2, 2)(\frac{5}{2}, 4)\}$$

$$ب) f(u^2) \rightarrow \{(1, 2)(-1, 2)(\sqrt{3}, -1)(-\sqrt{3}, -1)(2, 2)(-2, 2)\}$$

$$ج) 2g^2(u)+1 \rightarrow \{(-2, 11)(1, 3)(3, 9)(-1, 1)\}$$

$$د) \frac{2f}{g} \rightarrow \{(\frac{2}{-1}, \frac{1}{-1})(1, \frac{2}{-1})(3, \frac{2}{-1})\} \Rightarrow \{(1, -2)(3, -1)\}$$

دامنه مشترک = $\{-1, 1, 3\}$

۳

$$دامنه مشترک \Rightarrow \{-2, 2, 3\}$$

$$h = 2f + g \Rightarrow \{(-2, 9)(2, 5)(3, 5)\}$$

۴

$$f(u) = \frac{\sqrt{3u-u}}{u-2} \quad g(u) = [u] + [-u]$$

$$\left(\frac{f}{g+1}\right)(u) \Rightarrow \left(u, \frac{\sqrt{3u-u}}{\frac{u-2}{[u]+[-u]+1}}\right) \rightarrow \left(u, \frac{\sqrt{3u-u}}{(u-2)([u]+[-u]+1)}\right)$$

$$3u \geq 0 \rightarrow u \geq 0$$

$$\sqrt{3u-u} \geq 0 \rightarrow \frac{0}{-1+1} [0, 3]$$

$$u-2 \neq 0 \rightarrow u \neq 2$$

$$[u] + [-u] + 1 \neq 0 \rightarrow \{u | u \in \mathbb{Z}\}$$

$$\Rightarrow D = \{0, 1, 3\}$$

۵

$$u \in \mathbb{Z} \Rightarrow 0 \checkmark$$

$$u \in \mathbb{Z} \Rightarrow -1 \times$$

$f(u) = \sqrt{5u - u^2 - 2} \rightarrow \sqrt{-(u-1)(u-2)}$ $g(u) = \{(1,3)(2,2)(3,4)(5,1)\}$ $h(u) = \frac{f(u)}{g(u)} = \left\{ (1,0) (2, \frac{\sqrt{2}}{2}) (3,0) \right\}$ $u=1 \rightarrow f(u)=0$ $u=2 \rightarrow f(u) = \frac{\sqrt{2}}{2}$ $u=3 \rightarrow f(u)=0$ $u=5 \rightarrow f(u), \sqrt{-2} \text{ غير موجود}$	٦
الف) $y = u^3 - 3u^2 + 3u \rightarrow y-1 = (u-1)^3 \Rightarrow u-1 = \sqrt[3]{y-1} \Rightarrow u = \sqrt[3]{y-1} + 1$ $\leftarrow \text{هنا يجب ان يكون موجودا}$ $R = \mathbb{R}$ ب) $y = \frac{1}{u^2 - 2u} \rightarrow u^2 - 2u = \frac{1}{y} \rightarrow (u-1)^2 = \frac{1}{y} + 1 \Rightarrow u-1 = \sqrt{\frac{1+y}{y}} \Rightarrow u = \sqrt{\frac{1+y}{y}} + 1$ $\frac{1+y}{y} \geq 0 \Rightarrow \frac{-1}{+} \neq \frac{0}{-} \Rightarrow R = (-\infty, -1] \cup (0, +\infty)$	٧
الف) $y = u^2 - 2u + 1 \quad \min y \quad R = [4, +\infty)$ ب) $y = -u^2 + 4u + 3 \quad \max y \quad R = (-\infty, 12]$ ج) $y = \sqrt{u^2 - 2u - 3} \quad \min y \quad R = \sqrt{[-1, +\infty)} \Rightarrow R = [0, +\infty)$ د) $y = \sqrt{4u - u^2} \quad \max y \quad R = \sqrt{(-\infty, 4]} \Rightarrow R = [0, 2]$	٨
الف) $y = u^3 - 5u^2 + 2u + 1 \Rightarrow R = \mathbb{R}$ ب) $y = u^5 - 4u^2 + 3u + 2 \Rightarrow R = \mathbb{R}$ ج) $y = \sqrt{u^5 - 4u^2 + 5u + 1} \Rightarrow R = \sqrt{(-\infty, +\infty)} \Rightarrow R = [0, +\infty)$ د) $y = (u^5 - 2u^2 + 3u + 1)^2 \Rightarrow R = ((-\infty, +\infty))^2 \Rightarrow R = [0, +\infty)$	٩
الف) $y = \frac{3u+1}{u-2} \Rightarrow R = \mathbb{R} - \{3\}$ ب) $y = \frac{2u+1}{u+1} \Rightarrow R = \mathbb{R} - \{2\}$	١٠