

نام و نام خانوادگی: آلاء و ساره میری

بایستی به قسری کالیف سراره: لا

ملاس: باز دهم و خنجر

$$f(x) = \sqrt{x+4} \sqrt{x-4} \quad g(x) = \sqrt{x-4} \sqrt{x-4} \quad x > 4 \quad f(x) + g(x) = a + b\sqrt{x+c}$$

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

$$f(x) + g(x) = \sqrt{x-4} + 2 + \sqrt{x-4} - 2 = 2\sqrt{x-4} \quad a=0 \quad b=2 \quad c=-4 \quad \frac{a+b}{c} = \frac{0+2}{-4} = -\frac{1}{2}$$

مجاب

$$f(x) = \frac{x+2}{x^2-4x+3} \quad g(x) = \{(2,1)(1,0)(3,4)(0,4)\}$$

$$f(x) = \{(2,-4)(1,-\frac{5}{2})(3,\frac{5}{2})(0,\frac{2}{3})\} = \{(2,-4)(0,\frac{2}{3})\}$$

$$\frac{g}{f} = \{(2,-\frac{1}{4})(0,1)\} \quad \text{مجاب}$$

$$f(x) = \{(1,2)(3,-1)(4,2)(-1,2)\} \quad g(x) = \{(-2,4)(1,-1)(3,2)(-1,0)\}$$

$$\text{الف) } f(2x) = \{(\frac{1}{2},2)(\frac{3}{2},-1)(2,2)(-\frac{1}{2},2)\} \quad \text{مجاب}$$

$$\text{ب) } f(x^2) = \{(1,2)(\sqrt{3},-1)(2,2)(-1,2)\} \quad \text{مجاب}$$

$$\text{ج) } f(g(x)) = \{(-5,14)(1,3)(3,9)(-1,1)\}$$

$$\text{د) } \frac{f}{g} = \{(1,-4)(3,-1)(-1,-\frac{5}{2})\} = \{(1,-4)(3,-1)\} \quad \text{مجاب}$$

$$f(x) = \{(2,1)(3,1)(4,9)(-2,0)\} \quad g = \{(5,1)(2,4)(-3,4)(-1,2)(3,3)\}$$

$$h = 2f + g \quad h = \{(2,5)(3,5)(-2,4)\} \quad \text{مجاب}$$

$$f(x) = \sqrt{3x-x^2} \quad g(x) = [x] + [-x] \quad D_f \rightarrow (\frac{f}{g+1})(x)$$

$x-2 \neq 0 \rightarrow x \neq 2$

$[x] + [-x] \rightarrow \text{if } x \in \mathbb{Z} \quad \text{مجاب فنج 1 و 2 برابر 1- باشد و در غیر این صورت 0 باشد}$

$\text{if } x \notin \mathbb{Z} \quad \text{و کالیف ششده من شود}$

$x > 0 \rightarrow x, 0 \quad \sqrt{3x-x^2}, 0 \rightarrow x^2-3x \leq 0 \rightarrow x(x-3) \leq 0 \rightarrow x \in [0,3]$

$x \in \mathbb{Z} \quad \text{مجاب}$

$\{1, 2, 3\} \quad \text{مجاب}$

$[0,3] \quad \text{مجاب}$

$$f(x) = \sqrt{5x^2-x^2-2} \quad g(x) = \{(1,3)(2,2)(3,4)(0,1)\}$$

$$h(x) = \frac{f(x)}{g(x)} \rightarrow h(x) = \{(1,0)(\frac{2}{3},\frac{3}{4})(3,0)\} \quad \text{مجاب}$$

$$f(x) = \{(1,0)(2,\sqrt{3})(3,0)(4,\sqrt{2})\} = \{(1,0)(2,\sqrt{3})(3,0)\}$$

الف) $y = x^3 - 3x^2 + 4x - 1 + 1 \rightarrow y = (x-1)^3 + 1$ $y-1 = (x-1)^3 \rightarrow \sqrt[3]{y-1} = x-1 \rightarrow x = \sqrt[3]{y-1} + 1$
 جواب: $R_f = R$

ب) $y = \frac{1}{x^2 - 2x + 1} \rightarrow y = \frac{1}{(x-1)^2}$ $y(x-1)^2 = 1 \rightarrow y(x-1) = 1+y \rightarrow (x-1) = \frac{1+y}{y}$
 $x-1 = \sqrt{\frac{1+y}{y}} \rightarrow x = \sqrt{\frac{1+y}{y}} + 1$ $R_f = (-\infty, -1] \cup (0, +\infty)$ جواب

الف) $y = x^2 - 2x + 1 = (x-1)^2$ $x-1 = \sqrt{y}$ $x = \sqrt{y} + 1$ $R_f = [0, +\infty)$ جواب

ب) $y = -x^2 + 4x - 4 = -(x-2)^2$ $x-2 = \sqrt{-y}$ $x = \sqrt{-y} + 2$ $R_f = (-\infty, 0]$ جواب

ج) $y = \sqrt{x^2 - 2x - 3}$ $x^2 - 2x - 3 = y^2$ $x^2 - 2x - (y^2 + 3) = 0$ $x = \frac{2 \pm \sqrt{4 + 4(y^2 + 3)}}{2} = 1 \pm \sqrt{y^2 + 4}$ $R_f = [0, +\infty)$ جواب

د) $y = \sqrt{4x - x^2}$ $4x - x^2 = y^2$ $x^2 - 4x + y^2 = 0$ $x = \frac{4 \pm \sqrt{16 - 4y^2}}{2} = 2 \pm \sqrt{4 - y^2}$ $R_f = [0, 4]$ جواب

الف) $y = x^3 - 3x^2 + 2x + 1$ $R_f = R$ جواب

ب) $y = x^3 - 3x^2 + 3x + 1$ $R_f = R$ جواب

ج) $y = \sqrt{x^3 - 3x^2 + 3x + 1}$ $R_f = [0, +\infty)$ جواب

د) $y = (x^3 - 3x^2 + 3x + 1)^2$ $R_f = [0, +\infty)$ جواب

الف) $y = \frac{x+1}{x-2}$ $R_f = R - \{2\}$ جواب

ب) $y = \frac{x+1}{x+1}$ $R_f = R - \{-1\}$ جواب