

نام و نام خانوادگی کلاس پاسخنامه تشریحی تکلیف شماره ۱۳۹۸/۱۲/۲۰

$$f(x) = \sqrt{x+4}\sqrt{x-4} \quad (f+g)^2 = (x+4)\sqrt{x-4} + (x-4)\sqrt{x-4} = 2x+4x-16 = 6x-16$$

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

$$p(x) + q(x) = a + b\sqrt{x+c} \quad 2fg = 2\sqrt{(x+4)\sqrt{x-4}}(x-4)\sqrt{x-4} = 2\sqrt{(x-4)^3} = 2(x-4)\sqrt{x-4}$$

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

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

$$p(x) = \frac{x+2}{x^2-5x+4} \Rightarrow (x-1)(x-4) = x^2 - 5x + 4$$

$$q(x) = \left\{ (1,1), (4,0), (2,4), (0,5) \right\} \quad x=2 \Rightarrow q(2)=1 \quad f(2) = \frac{4}{-6} = -\frac{2}{3} \quad \frac{q(2)}{f(2)} = \frac{1}{-\frac{2}{3}} = -\frac{3}{2}$$

$$\frac{g}{f} = 2 \Rightarrow \left\{ (2, -\frac{1}{2}), (0, 6) \right\} \quad x=0 \quad g(0)=4 \quad f(0) = \frac{0+2}{0-0+4} = \frac{1}{2} \quad \frac{g(0)}{f(0)} = \frac{4}{\frac{1}{2}} = 8$$

$$f(x) = \left\{ (1,2), (2,1), (4,2), (-1,4) \right\} \quad \text{الف) } f(x) = \left\{ (\frac{1}{2}, 2), (\frac{2}{3}, -1), (2, 2), (-\frac{1}{2}, 4) \right\}$$

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

$$\text{ج) } 2g(x)+1 = \left\{ (-2, 7), (1, 3), (3, 9), (-1, 1) \right\}$$

$$\text{د) } \frac{f}{g} = \left\{ (-\frac{1}{2}, \frac{2}{3}), (1, -\frac{1}{4}), (2, -1) \right\}$$

$$f(x) = \left\{ (2,1), (3,1), (4,9), (-2,0) \right\}$$

$$g = \left\{ (1,1), (2,3), (-2,4), (-1,2), (3,3) \right\}$$

$$h = 2f+g \Rightarrow \left\{ (2,3), (3,5), (-2,4) \right\}$$

$$x=2 \Rightarrow 2(1)+3=5 \quad x=-2 \Rightarrow 2(0)+4=4$$

$$x=3 \Rightarrow 2(1)+3=5$$

$$f(x) = \frac{\sqrt{x+2}}{x-2} \rightarrow \sqrt{x+2} > 0 \rightarrow x > -2 \quad \sqrt{x-2} > 0 \rightarrow x > 2 \quad \sqrt{x+2} > 2 \rightarrow x > 2$$

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

$$g(x) = [x] + [-x]$$

$$\left(\frac{f}{g+1}\right)(x) = ? \quad \text{ع) } x(x-x)=0 \rightarrow g+1=1$$

$$x(x-x)=0 \rightarrow g(x)-1 \rightarrow g(x)+1=0$$

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

$f(x) = \sqrt{2x - x^2 - F}$ $g(x) = \{(1, 1), (2, 2), (3, 3), (4, 4)\}$ $h(x) = \frac{f(x)}{g(x)} = \{(1, 0), (2, \frac{1}{2}), (3, 0)\}$	$x=1 \rightarrow \sqrt{2-1-F} = 0$ $x=2 \rightarrow \sqrt{4-4-F} = \sqrt{-F}$ $x=3 \rightarrow \sqrt{6-9-F} = \sqrt{-F-3}$ $x=4 \rightarrow \sqrt{8-16-F} = \sqrt{-F-8}$ $h(1) = \frac{0}{1} = 0$ $h(2) = \frac{\sqrt{-F}}{2}$ $h(3) = 0$	6
$1) y = x^3 - 3x^2 + 4x$ $y-1 = (x-1)^3 \rightarrow \sqrt[3]{y-1} = x-1 \rightarrow x = \sqrt[3]{y-1} + 1$ $R_f = \mathbb{R}$	$y = x^3 - 3x^2 + 4x$ $y-1 = (x-1)^3$ $x = \sqrt[3]{y-1} + 1$ $R_f = \mathbb{R}$	7
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