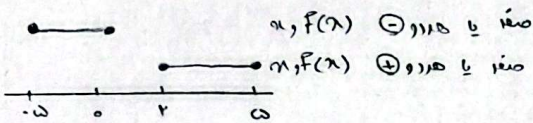


نام و نام خانوادگی زیره حسن اسلامی پاسخنامه تشریحی تکلیف شماره کلاس پنجم دبیرستان (معمولی) ...

$$x f(x) \geq 0$$

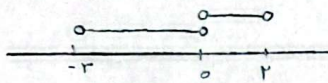


$$D_f = [-5, 0] \cup [2, 5]$$

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$$\frac{-x}{f(x)} \geq 0$$

$$\hookrightarrow f(x) \neq 0 \rightarrow x \neq -2, 0, 3, -3$$



$$f(x) \leq 0, x \leq -2 \text{ یا } 0 \leq x \leq 3$$

$$\text{اعداد صحیح} \rightarrow -2, -1, 1$$

$$\{3\}$$

۲

$$f(x) - 2f(2) = x^2 - 3x + 4 \rightarrow f(x) = 2f(2) + x^2 - 3x + 4$$

$$f(2) = 2f(2) + 4 - 6 + 4 \rightarrow -f(2) = -2 \rightarrow f(2) = 2$$

$$f(-1) = 1 + 4 + 4 + 4 = 13$$

۳

$$f(x) = \begin{cases} x - \sqrt{x+4} & ; x \geq 3 \\ 2x+3 & ; x < 3 \end{cases} \quad f(f(5)) + f(f(1)) = 2 + 4 = 6$$

$$f(1) = 2(1)+3=5 \rightarrow f(5) = 5 - \sqrt{5+4} = 2$$

$$f(2) = 2(2)+3=7$$

۴

$$f(x) = ax^2 - bx + 2 \Rightarrow f(x-1) = a(x-1)^2 - b(x-1) + 2 = ax^2 + a - 2ax - bx + b + 2$$

$$f(x-1) - f(x) = ax^2 + a - 2ax - bx + b + 2 - (ax^2 - bx + 2) = -2ax + a + b = 4x + 2$$

$$-2ax + a + b = 4x + 2 \rightarrow \begin{cases} -2ax = 4x \rightarrow a = -2 \\ a + b = 2 \rightarrow -2 + b = 2 \rightarrow b = 4 \end{cases} \Rightarrow a - b = -2 - 4 = -6$$

۵

$F(x) = \frac{x^2 + 4x + 5}{x^2 + 4x + 5} \Rightarrow F(\sqrt{10} - 2) = \frac{(\sqrt{10} - 2)^2 + 4(\sqrt{10} - 2) + 5}{(\sqrt{10} - 2)^2 + 4(\sqrt{10} - 2) + 5} = \frac{10 + 4\sqrt{10} - 4 + 4\sqrt{10} - 8 + 5}{10 + 4\sqrt{10} - 4 + 4\sqrt{10} - 8 + 5} = \frac{F}{4} = \frac{1}{4}$	6
$F(x - \frac{1}{x}) = \frac{x^2 + 1}{x^2} \quad \frac{x^2 + 1}{x^2} = x^2 + \frac{1}{x^2} = (x - \frac{1}{x})^2 + 2 \Rightarrow (-1)^2 + 2 = 1 + 2 = 3$	7
$F(x) = \{(1, 0), (1, -4), (0, 2), (1, 1)\} \Rightarrow DF = \{(0, 0), (0, 1)\}$ $g(x) = \sqrt{9 - x^2} \quad 9 - x^2 \geq 0 \rightarrow x^2 \leq 9 \rightarrow -3 \leq x \leq 3 \rightarrow Dg = \{-3, -2, -1, 0, 1, 2, 3\}$ الف) $\frac{F}{g} = \{(0, \frac{1}{3}), (1, \frac{2}{\sqrt{5}}), (2, 0)\} \Rightarrow \text{مقدار: } \frac{2}{\sqrt{5}} = -\sqrt{2}$ ب) $\frac{g}{F} = \{(0, \frac{1}{2}), (1, -\frac{\sqrt{5}}{2})\}$	8
$F(x) = \{(2, 1), (3, 4), (-5, 2), (1, -2)\}$ الف) $F(x) = \{(2, 2), (3, 8), (-5, 4), (1, -4)\}$ ب) $F(x) + 1 = \{(2, 3), (3, 5), (-5, 3), (1, -1)\}$ ج) $3F^2(x) + 1 = \{(2, 4), (3, 9), (-5, 13), (1, 13)\}$ د) $F(2x) = \{(1, 1), (\frac{1}{2}, 4), (-\frac{5}{2}, 2), (\frac{1}{2}, -2)\}$	9
$F(x) = \{(\frac{1}{2}, \frac{3}{4}), (1, \frac{1}{2}), (\frac{1}{2}, \frac{1}{2}), (\frac{1}{2}, \frac{1}{2})\} \quad g(x) = \{(0, 0), (1, 1), (-1, 4), (-2, -3), (3, -1)\}$ الف) $F - g = \{(1, 4), (3, 2), (2, 2)\}$ ب) $\frac{F}{g} = \{(2, 4), (3, -2), (\frac{1}{2}, \frac{1}{2})\}$	10