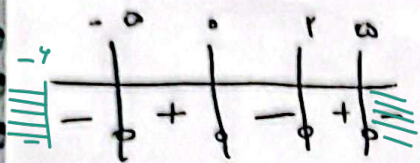


یکتا انوری. قسم B

14 آزمون

سؤال 1: $y = \sqrt{x} f(x) \rightarrow xf(x) \geq 0$



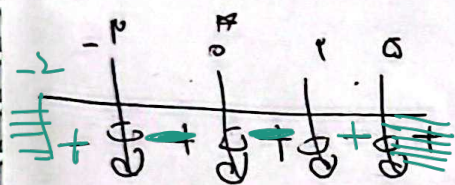
$D_f = [-5, 0] \cup [2, 5]$

ارباب

2

سؤال 2: $y = \sqrt{\frac{-x}{f(x)}} \rightarrow \frac{-x}{f(x)} \geq 0$

با توجه به عدد 5 به سبب ترتیب غرض



$D_f = (-2, 0) \cup (0, 2) \cup (5, +\infty)$

$Df = (-2, 2) - \{0\}$

در این شمار اعداد صحیح 3 مورد

1

سؤال 3: $f(x) - 2f(2) = x^2 - 3x + 4$

$f(-2) = ?$ مقدار

$x=2 \rightarrow f(2) - 2f(2) = 2 \rightarrow -f(2) = 2 \rightarrow f(2) = -2$

$x=-2 \rightarrow f(-2) + 4 = 14 \rightarrow f(-2) = 10$

✓

2

سؤال 4: $f(x) = \begin{cases} x - \sqrt{x+4} & ; x > 4 \\ 2x+3 & ; x \leq 4 \end{cases}$

مقدار: $f(f(5)) + f(f(1)) = ?$

$x=1 \rightarrow 2 \times 1 + 3 = 5$

$\Rightarrow 5 + 2 = 7$

$x=5 \rightarrow 5 - \sqrt{9} = 5 - 3 = 2$

$x=2 \rightarrow 2 \times 2 + 3 = 7$

$a - b = ?$

سؤال 5: $f(x) = ax^2 - bx + 2$

$f(x-1) - f(x) = 4x + 2$

$x=1 \rightarrow f(1) = a - b + 2$

$f(0) - f(1) = 8$

$x=0 \rightarrow f(0) = 2$

$\Rightarrow 2 - a + b + 2 = 8 \rightarrow -a + b = 4 \rightarrow a - b = -4$

2

(سؤال ٦)

$$f(x) = \frac{x^2 + 4x + 5}{x^2 + 4x + 7}$$

مطابق: $f(\sqrt{3}-2) = ?$

$$\frac{(x+2)^2 + 1}{(x+2)^2 + 3} \rightarrow x = \sqrt{3}-2 \Rightarrow f(\sqrt{3}-2) = \frac{(\sqrt{3}-2+2)^2 + 1}{(\sqrt{3}-2+2)^2 + 3} = \frac{1}{4} = \frac{1}{4}$$

(سؤال ٧) $f(-3)$ مطلوبه

$$f(x - \frac{1}{x}) = \frac{x^2 + 1}{x^2} = \frac{x^2}{x^2} + \frac{1}{x^2} = x^2 + \frac{1}{x^2}$$

$$\Rightarrow f(x - \frac{1}{x}) = (x - \frac{1}{x})^2 + 2 \Rightarrow f(-3) = (-3)^2 + 2 = 11$$

(سؤال ٨) $f(x) = \{(2, 0), (1, -4), (0, 2), (7, 1)\}$

$$g(x) = \sqrt{9-x^2} \rightarrow 9-x^2 \geq 0 \rightarrow -3 \leq x \leq 3$$

الف) $\frac{f}{g} \rightarrow \{(2, 0), (1, \frac{-4}{\sqrt{8}}), (0, \frac{2}{2})\}$

ب) $\frac{g}{f} = \{(2, \frac{\sqrt{5}}{0}), (1, \frac{-\sqrt{8}}{-4}), (0, \frac{2}{2})\} = \{(1, \frac{\sqrt{8}}{-4}), (0, \frac{2}{2})\}$

(سؤال ٩) $f(x) = \{(2, 1), (3, 4), (-5, 2), (1, -2)\}$

الف) $\{(2, 2), (3, 8), (-5, 8), (1, -4)\}$

ب) $\{(2, 2), (3, 5), (-5, 3), (1, -1)\}$

ج) $\{(2, 4), (3, 16), (-5, 4), (1, 1)\}$

د) $\{(2, 1), (\frac{1}{2}, 4), (-\frac{5}{2}, 2), (\frac{1}{2}, -2)\}$

سؤال ١٠ :

$$f(x) = \{(2, 3), (7, 2), (1, 4), (3, 1), (5, 2)\}$$

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

الف) $f - g = \{(2, 2), (1, 4), (3, 2)\}$

ب) $\frac{f}{g} = \{(2, 2), (1, 4), (3, 2)\}$