

$A = \{1, 2, 3\}$

$B = \{2, 3\}$

$A \times B - B^T \rightarrow \{(1, 2), (1, 3), (2, 2), (2, 3), (3, 2), (3, 3)\} - \{(2, 2), (2, 3), (3, 2), (3, 3)\}$

$\{(1, 2), (1, 3)\}$ ✓

(5)

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الف) $f(x) = \{(x^2, m^2), (2, 1), (-3, m), (2, m), (3, m), (m, 2)\}$

$m^2 - 2m + 2 = 0$

$(m-2)(m+1) = 0$

$m = 2$ یا $m = -1$

$m = 2 \rightarrow (2, 2), (2, 1), (3, 2), (-1, 2), (-1, 1)$

$m = -1 \rightarrow (1, 1), (1, 2), (2, 1), (2, -1), (3, -1)$

$g(x) = \{(x^2, m^2), (2, 1), (m, 2), (3, m), (-2, m), (-1, 3)\}$

$m^2 - 2m + 2 = 0$

$(m-2)(m+1) = 0$

$m = 2$ یا $m = -1$

$m = 2 \rightarrow (2, 2), (2, 1), (3, 2), (-1, 2), (-1, 1)$

$m = -1 \rightarrow (1, 1), (1, 2), (2, 1), (2, -1), (3, -1)$

(5)

2

$f(x) = \begin{cases} x^2 - 1; & x \leq 1 \\ ax + b; & 1 < x \leq 2 \\ x^3; & x > 2 \end{cases}$

$x = 1 \rightarrow a + b = 0$

$x = 2 \rightarrow 2a + b = 7$

$a = 7, b = -7$

$f(x) = \begin{cases} x^2 - 1; & x \leq 1 \\ 7x - 7; & 1 < x \leq 2 \\ x^3; & x > 2 \end{cases}$

$ax + b = -7x + 7$

(5)

3

$f(x) = \begin{cases} 2x - 3; & x \geq k \\ 5 - 3x; & x < k \end{cases}$

$2k - 3 = 5 - 3k$

$5k = 8 \rightarrow k = \frac{8}{5} = 1.6$

$k \rightarrow 1.6$

(5)

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5



$$\begin{aligned} (x_i, y_i) \in f &\rightarrow -y_i^r \cdot 2x_i^r + 1 \\ (x_r, y_r) \in f &\rightarrow -y_r^r \cdot 2x_r^r + 1 \end{aligned}$$

۵ نفر سود

$$\frac{x^2 - 2x + 1 + 8y^2 - 12y + 9}{(x-1)^2 (y-3)^2} \rightarrow \frac{(x-1)^2}{(x-1)^2} + \frac{(y-3)^2}{(y-3)^2} = 1 + 1 = 2$$

در تفسیر و تابع است

تابع نیست ✓

$$\frac{y}{y} + \frac{y}{x} + \sqrt{\frac{xy}{xy}} = 2 \quad \text{E}$$

$\frac{x}{y} + \frac{y}{x} = 2$

Df = 2 (091)

$$D_f = [0, \infty] \quad \frac{\sqrt{x}}{\sqrt{x}} \gg \sqrt{x}$$

$$n \leq 1$$

$$Df \subseteq (-\infty, 1] \cup (1, 4] \cup (4, +\infty)$$

DP $\rightarrow 10 + E - \sqrt{20} \rightarrow 10 \frac{E}{W}$ ✓

$(-\infty, \frac{1}{\sqrt{e}}) \cup (\frac{1}{\sqrt{e}}, +\infty)$

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