

ایک مثال

۱۷، ۲۵

$$A \times B = \{(1,2), (1,3), (2,2), (2,3), (3,2), (3,3)\}$$

$$B \times B = \{(2,2), (2,3), (3,2), (3,3)\}$$

$$\Rightarrow (A \times B) - B^2 = \{(1,2), (1,3)\}$$

(۲)

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$$m^2 \geq m+2 \Rightarrow m^2 - m - 2 \geq 0 \Rightarrow (m-2)(m+1) \geq 0 \Rightarrow \boxed{m \geq 2, -1}$$

(الف، ۲)

$$\text{if } m=2 \Rightarrow f(2) = \{(2,1), (2,4)\} \rightarrow \text{تابع نیست} \Rightarrow \boxed{m \geq -1}$$

(۱، ۵)

$$m^2 \geq m+2 \Rightarrow m^2 - m - 2 \geq 0 \Rightarrow \boxed{m \geq 2, -1} \quad \text{if } m=-1 \Rightarrow g(1) = \{(-1,4), (-1,3)\}$$

$$\Rightarrow \boxed{m=2} \rightarrow (2,1), (2,4) \text{ تابع نیست}$$

$$a=1 \Rightarrow a^2-1 \geq a^2+b \Rightarrow \boxed{0 \geq a+b} \quad a \geq 2 \Rightarrow a^2 \geq a+b \Rightarrow 1 \geq 2a+b$$

$$\begin{cases} 2a+b \geq 1 \\ a+b \geq 0 \end{cases} \Rightarrow \boxed{a \geq 1, b \geq -1} \Rightarrow \boxed{a \times b \geq -1}$$

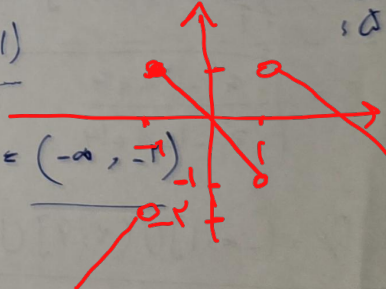
$$a^2 - 2 \geq 4a - 2a \Rightarrow 5a \geq 2 \Rightarrow a \geq \frac{2}{5} \Rightarrow 1 \leq \frac{2}{5}$$

if $a \in K$

$$D_f \subset \mathbb{R} - \{0\} \quad R_f = \{a \mid a > 1\} \Rightarrow R_f = (-\infty, 1)$$

$$\text{if } -1 \leq a < 1 \Rightarrow R_f = (-1, 1] \quad \text{if } a < -1 \Rightarrow R_f = (-\infty, -1)$$

$$\Rightarrow R_{f_T} = R_f \cup R_{f_1} \cup R_{f_2} = (-\infty, 1] \quad \text{شکل !!}$$



$$xy^2 + x^2 < 1 \Rightarrow xy_1^2 \geq xy_2^2 \Rightarrow \boxed{y_1 \geq y_2} \text{ تابع مستقیم}$$

(الف، ۹)

$$2^x + 4y^2 - 2x - 12y + 10 \geq 0 \quad (x^2 - 2x + 1) + (4y^2 - 12y + 9) \geq 0$$

$$(x-1)^2 + (2y-3)^2 \geq 0 \Rightarrow \begin{cases} x=1 \\ y=3/2 \end{cases}$$

در این نقطه تابع مستقیم

$$a \sin y = y \sin a \rightarrow \text{if } a=0 \Rightarrow 0 \times (\sin y) = y \times 0 \Rightarrow y \in \mathbb{R} \quad \text{تابع زوج} \quad (الف, ٧)$$

$$\sqrt{\frac{a}{y}} + \sqrt{\frac{y}{a}} = 2 \Rightarrow \frac{a}{y} + \frac{y}{a} = 4 \Rightarrow \frac{a^2 + y^2}{ay} = 4 \Rightarrow a^2 + y^2 = 4ay \Rightarrow (a-y)^2 = 0 \Rightarrow a=y$$

تابع زوج

$$\Rightarrow a^2 + y^2 - 4ay = 0 \rightarrow \text{if } a=1 \Rightarrow y^2 - 4y + 1 = 0 \Rightarrow \Delta = 16 - 4 = 12 \Rightarrow y = \frac{4 \pm \sqrt{12}}{2}$$

تابع زوج

$$\sqrt{\frac{a-1}{a-4}} \quad \frac{1}{+} \quad \frac{1}{-} \quad \frac{1}{+} \Rightarrow D_f = (-\infty, 1] \cup (4, +\infty)$$

$$\sqrt{\frac{1-a}{a}} \quad \frac{0}{-} \quad \frac{1}{+} \Rightarrow D_f = (0, 4]$$

(الف, ٨)

$$\sqrt{a} \geq 0, \sqrt{a} + \sqrt{y-1} = \sqrt{a} \Rightarrow a \leq 4 \Rightarrow D_f = [0, 4]$$

(ب)

$$g = \frac{\sqrt{a^2 - 4a + 4}}{\sqrt{a - 10a + 14}} \Rightarrow \sqrt{a^2 - 4a + 4} = \sqrt{(a-1)(a-4)} \quad \frac{1}{+} \quad \frac{1}{-} \quad \frac{1}{+} \Rightarrow D_f = (-\infty, 1] \cup [4, +\infty)$$

(الف, ٩)

$$\sqrt{-9a + 14} \Rightarrow a \leq \frac{14}{9} \Rightarrow D_f = (-\infty, \frac{14}{9}]$$

$$\Rightarrow D_f = (-\infty, 1]$$

(ب)

$$g = \sqrt{\frac{a^2 - 4a + 4}{a^2 - 10a + 14}} = \sqrt{\frac{(a-1)(a-4)}{(a-1)(a-11)}} \quad \frac{1}{+} \quad \frac{1}{-} \quad \frac{1}{+} \quad \frac{1}{-}$$

(ب)

$$D_f = (-\infty, 1] \cup (4, 11] \cup (11, +\infty)$$

$$\sqrt{4a^2 - 8a + 4} \Rightarrow \Delta = 16 - 4 = 12 \Rightarrow a = \frac{1 \pm \sqrt{3}}{2} = \left\{ \frac{1}{2}, 1 \right\}$$

(الف, ١٠)

$$D_f = (-\infty, 1] \cup \left[\frac{1}{2}, +\infty \right)$$

$$\sqrt{4a^2 - 4a + 1} \Rightarrow \Delta = 16 - 4 = 12 \Rightarrow a = \frac{1 \pm \sqrt{3}}{2} = 1, \frac{1}{2}$$

(ب)

$$D_f = (-\infty, 1) \cup \left(\frac{1}{2}, +\infty \right)$$

$$\Rightarrow D_f = (-\infty, 1) \cup \left[\frac{1}{2}, +\infty \right)$$

(ب)

$$g = \sqrt{\frac{2n^2 - 8n + 3}{2n^2 - 7n + 5}} = \sqrt{\frac{(2n-3)(n-1)}{(n-1)(2n-5)}}$$

$$\frac{1}{+} \frac{1}{-} \frac{1}{+} \frac{1}{-} \frac{1}{+}$$

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$$\Rightarrow \text{Def } (-\infty, \frac{5}{2}) \cup [\frac{3}{2}, +\infty) = \{1\}$$



اردين ملايں يا زعم