

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

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

$$5 \quad \text{الف) } m^2 = m + 2 \Rightarrow m^2 - m - 2 = 0 \Rightarrow a + c = b \Rightarrow m = -1, m = 2 \Rightarrow m = -1$$

باجیت $\rightarrow (2,4), (2,1)$

$$\text{ب) } m^2 = m + 2 \Rightarrow m^2 - m - 2 = 0 \Rightarrow m = -1, m = 2 \Rightarrow$$

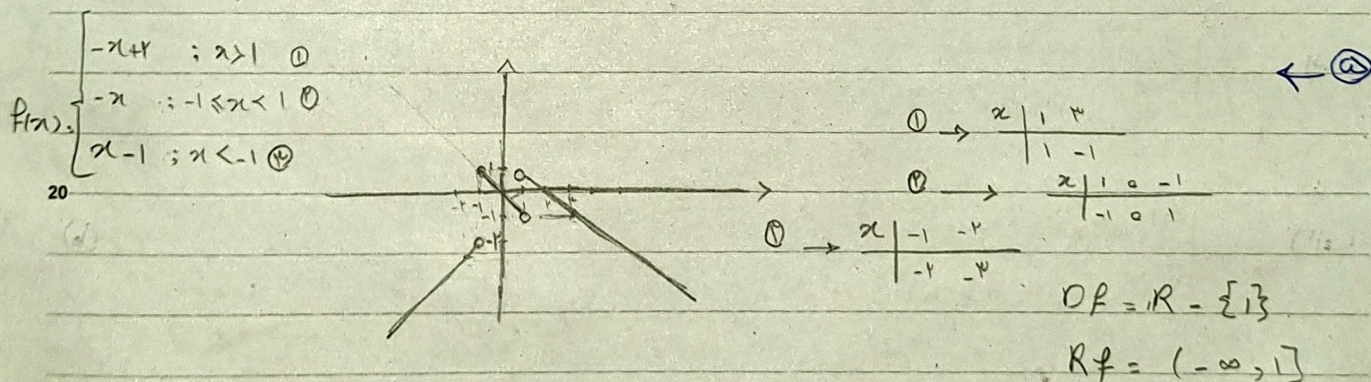
در ازای هیچ مقدار m رابطه نابع نیست
باجیت $\rightarrow (2,4), (2,1)$ و $(-1,3), (-1,4)$

$$10 \quad x=1 \rightarrow 1-1 = a+b \Rightarrow a+b=0 \leftarrow ②$$

$$x=2 \rightarrow 1 = 2a+b \Rightarrow 2a+b=1$$

$$a=1 \Rightarrow b=-1 \Rightarrow ab=-1$$

$$15 \quad x=K \rightarrow 2K-3 = 4-3K \Rightarrow 5K=7 \Rightarrow K = \frac{7}{5} \leftarrow ③$$



$$25 \quad \text{الف) } \begin{cases} 2y^3 = -x^2 - 1 \\ 2y^3 = -x^2 - 1 \end{cases} \rightarrow 2y_1^3 = 2y_2^3 \Rightarrow y_1^3 = y_2^3 \Rightarrow y_1 = y_2 \rightarrow \text{تابع است} \leftarrow ④$$

$$\text{ب) } (4y^2 - 12y + 9) = \frac{x^2 - 2x + 1}{(x-1)^2} \Rightarrow -(2y-3)^2 = (x-1)^2 \Rightarrow (x-1)^2 + (2y-3)^2 = 0 \Rightarrow$$

رابطه نابع است $\Rightarrow x=1, y=\frac{3}{2}$

الف) $x \sin y = y \sin x \rightarrow \text{if } x = \pi \Rightarrow y = 2K\pi \Rightarrow \text{نایم}$ ⑤

ب) $\sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2 \Rightarrow \frac{x}{y} + \frac{y}{x} + 2\sqrt{\frac{xy}{xy}} = 2 \Rightarrow \frac{x^2 + y^2}{xy} = 2 \Rightarrow (x-y)^2 = 0 \Rightarrow x=y \Rightarrow \text{نایم است}$

الف) $y = \sqrt{\frac{x-1}{x-3}} + \sqrt{\frac{3-x}{x}} \Rightarrow$ ④

① $+$ $+$ $-$ $+$ $\Rightarrow (-\infty, 1] \cup (3, +\infty) = \emptyset$

② $-$ $+$ $+$ $-$ $\Rightarrow (0, 2] = \emptyset \Rightarrow \emptyset \cap \emptyset = \emptyset$

$\Rightarrow Df = (0, 1]$

ب) $\sqrt{x} + \sqrt{y-1} = \sqrt{3} \Rightarrow \sqrt{y-1} = \sqrt{3} - \sqrt{x} \Rightarrow \sqrt{3} - \sqrt{x} \geq 0 \Rightarrow \sqrt{x} \leq \sqrt{3} \Rightarrow x \leq 3, x \geq 0$

$\Rightarrow Df = [0, 3]$

الف) $y = \sqrt{x^2 - 7x + 4} \rightarrow a+b+c=0 \Rightarrow x=4, x=1 \rightarrow$ ④

$\sqrt{x^2 - 10x + 14} \rightarrow \sqrt{-9x + 14} \Rightarrow -9x + 14 \geq 0 \Rightarrow x \leq \frac{14}{9} \Rightarrow$

$\emptyset \cap \emptyset \rightarrow Df = (-\infty, 1]$ 15

ب) $y = \sqrt{\frac{x^2 - 7x + 4}{x^2 - 10x + 14}} \rightarrow x=4, x=1$ ④

$\sqrt{x^2 - 10x + 14} \rightarrow x \leq 2, x \leq 14$

$Df = (-\infty, 1] \cup (2, 4] \cup (14, +\infty)$

الف) $y = \sqrt{\frac{2x^2 - 5x + 3}{3x^2 - 7x + 4}} \rightarrow a+b+c=0 \Rightarrow x \leq \frac{3}{2}, x \leq 1$ ⑥

$\sqrt{3x^2 - 7x + 4} \rightarrow a+b+c=0 \Rightarrow x \leq \frac{4}{3}, x \leq 1$

$\Rightarrow \emptyset \cap \emptyset$

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

ب) $y = \sqrt{\frac{2x^2 - 5x + 3}{3x^2 - 7x + 4}} \rightarrow x \leq \frac{3}{2}, x \leq 1$ ④

$\sqrt{3x^2 - 7x + 4} \rightarrow x \leq \frac{4}{3}, x \leq 1$

$Df = (-\infty, \frac{4}{3}) \cup [\frac{3}{2}, +\infty) - \{1\}$

در سوال ④ قسمت ب) نظر من که رابطه یی وجود دارد اگر اینگونه باشد $\leftarrow$

$y = \sqrt{\frac{x^2 - 7x + 4}{x^2 - 10x + 14}} \rightarrow$ ④

$\sqrt{x^2 - 10x + 14} \rightarrow x \leq 2, x \leq 14 \Rightarrow$

$Df = (-\infty, 1] \cup (14, +\infty)$ 30