

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

$$B^c = \{(2,2), (2,3), (3,2), (3,3)\}$$

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

(2)

-1

الف) $m^2 = m + 2$

$$\checkmark m^2 - m - 2 = 0 \Rightarrow (m-2)(m+1)$$

$$\Rightarrow m = -1$$

(2)

① $\rightarrow \{(3,4), (2,1), (-3,2), (-2,2), (3,4), (2,4)\}$
تابع نیست

② $\rightarrow \{(3,1), (2,1), (-3,-1), (-2,-1), (3,1), (-1,4)\}$
تابع است

-2

ب) $m^2 = m + 2$

$$\checkmark m^2 - m - 2 = 0 \Rightarrow (m-2)(m+1)$$

$\Rightarrow$ بدانی هیچ مقولم تابع نیست

③ $\rightarrow \{(3,4), (2,1), (2,4), (3,4), (-2,2), (-1,3)\}$
تابع نیست

④ $\rightarrow \{(3,1), (2,1), (-1,4), (3,1), (-2,-1), (-1,3)\}$
تابع نیست

-3

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

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

$$\left. \begin{array}{l} a=1, b=-1 \Rightarrow ab=-1 \end{array} \right\}$$

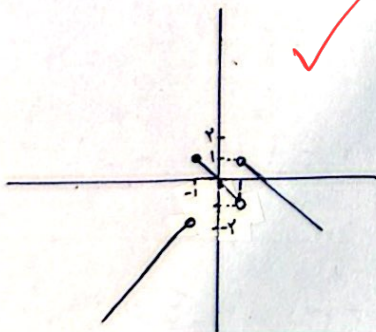
(2)

-4

$$2x-3 = 4-3x$$

$$5x = 7 \Rightarrow x = \frac{7}{5}$$

(2)



$$D = (-\infty, 1) \cup (1, +\infty)$$

$$R = (-\infty, 1]$$

(2)

-5

الف) $2y^3 + x_1^2 + 1 = 0$

$$2y_r^3 + x_r^2 + 1 = 0$$

$$\left. \begin{array}{l} x_1 = x_r \\ x_1^3 = x_r^3 \end{array} \right\} \Rightarrow y_1 = y_r$$

تابع است

(2)

-6

ب) $x^2 - 2x + 1 + 4y^2 - 12y + 9 = 0$

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

$$\rightarrow \frac{1}{\frac{3}{2}}$$

تابع است

الف) $x \sin y = y \sin x \xrightarrow{x=0} y=0 \Rightarrow$ تابع نیست

ب) $a + \frac{1}{a} = 2 \Rightarrow a = \frac{1}{a} = 1 \Rightarrow x = y \Rightarrow$ تابع است

الف) $\sqrt{\frac{x-1}{x-3}} + \sqrt{\frac{2-x}{x}}$

$\frac{1}{+} \frac{3}{-} \frac{2}{+}$

$\left. \begin{array}{l} \frac{1}{-} \frac{3}{+} \frac{2}{-} \\ (0, 2] \end{array} \right\} \cap \rightarrow (0, 1]$

$(-\infty, 1] \cup (2, +\infty)$

ب) $\sqrt{x} + \sqrt{y-1} = \sqrt{3} \rightarrow \sqrt{y-1} = \sqrt{3} - \sqrt{x}$

$x \geq 0 \quad ①$

$y-1 \geq 0 \rightarrow y \geq 1$

$\Rightarrow \sqrt{x} \leq \sqrt{3}$
 $x \leq 3 \quad ②$

$① \cap ② \rightarrow 0 \leq x \leq 3 \quad D = [0, 3]$

الف) $\sqrt{x^2 - \sqrt{x+6}} \rightarrow (x-6)(x-1)$

$\frac{1}{+} \frac{6}{-} \frac{1}{+} \quad (-\infty, 1] \cup [6, +\infty) \quad ①$

$\sqrt{x^2 - 10x + 16} \rightarrow (x-8)(x-2)$
 $x-10x = -4x$

$\frac{2}{+} \frac{8}{-} \quad (-\infty, 2) \cup (8, +\infty) \quad ②$

$① \cap ② \rightarrow (-\infty, 1] \cup (8, +\infty) = D$

ب) $\sqrt{\frac{x^2 - \sqrt{x+6}}{x^2 - 10x + 16}} \rightarrow \frac{1}{+} \frac{2}{-} \frac{6}{+} \frac{8}{-} \quad D = (-\infty, 1] \cup (2, 6] \cup (8, +\infty)$

الف) $\frac{\sqrt{2x^2 - 5x + 3}}{\sqrt{3x^2 - \sqrt{x+6}}} \rightarrow \frac{-b \pm \sqrt{\Delta}}{2a} < \frac{1}{\frac{3}{4}}$

$\frac{1}{+} \frac{3}{-} \frac{4}{+} \quad (-\infty, 1] \cup [\frac{3}{4}, +\infty) \quad ①$

ا) جمع فریب صنف
باشه یکی از اینها
دیویتی ک است

$\frac{-b \pm \sqrt{\Delta}}{2a} < \frac{1}{\frac{3}{4}}$

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

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

ب) $\sqrt{\frac{2x^2 - 5x + 3}{3x^2 - \sqrt{x+6}}} \rightarrow \frac{1}{+} \frac{3}{-} \frac{4}{+} \rightarrow (-\infty, \frac{3}{4}) \cup [\frac{3}{4}, +\infty) - \{1\}$