

۱۸,۷۵

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

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

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

(۲)

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$$m^2 \leq m+2 \Rightarrow 0 = m^2 - m - 2 \quad \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{1+2}{2} \text{ و } \frac{1-2}{2} = \frac{3}{2} \text{ و } -1$$

پس قابل قبول زیرا: $\{(2,1), (2,4)\}$ و $\{(1,1)\}$ به تابع نیست $m = -1$

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$$m^2 \leq m+2 \Rightarrow 0 = m^2 - m - 2 \quad \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{1+2}{2} \text{ و } \frac{1-2}{2} = \frac{3}{2} \text{ و } -1$$

همچنین تابع نباشد $\{(2,1), (2,4)\}$ و $\{(1,1)\}$ به تابع نیست $m = -1$

$$\begin{cases} (1)^2 - 1 = 0 \\ a(1) + b = a + b \end{cases} \Rightarrow a + b = 0$$

$$\begin{cases} (2)^2 = 1 \\ a(2) + b = 2a + b \end{cases} \Rightarrow 2a + b = 1$$

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

$$a \times b = 1 \times (-1) = -1$$

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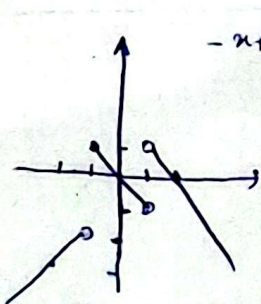
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$$\begin{cases} 2n-3 & ; n \geq k \\ 4-3n & ; n \leq k \end{cases} \rightarrow \text{در صورتی تابع است که } x(n) \text{ تکرار نشود}$$

$$2(k)-3 = 4-3(k) \rightarrow 2k-3 = 4-3k \rightarrow 5k = 7 \rightarrow k = \frac{7}{5}$$

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$$-x+2 \begin{cases} -(-1)+2=1 \\ -(2)+2=0 \end{cases}$$

$$-x \begin{cases} -(-1)=1 \\ -(1)=-1 \end{cases}$$

$$x-1 \begin{cases} -1-1=-2 \\ -2-1=-3 \end{cases}$$

$$R = \{1\}$$

$$B = (-\infty, -2) \cup (-1, 1]$$

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

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$$\left. \begin{aligned} x^3 + y^3 + 1 &= 0 \\ x^3 + y^3 + 1 &= 0 \end{aligned} \right\} \Rightarrow x^3 + y^3 + 1 = 0 \Rightarrow x^3 + y^3 + 1 = 0$$

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تابع است $y, x \rightarrow y^3, x^3 \rightarrow y^3, x^3$

$$x^3 + y^3 + 1 = 0 \Rightarrow (x^3 + y^3 + 1) = 0 \Rightarrow (x^3 + y^3 + 1) = 0$$

جمع دو عبارت همواره مثبت شده منفرجه می شود $\Rightarrow$ $x^3 + y^3 + 1 = 0$

$$x^3 + y^3 + 1 = 0 \Rightarrow x^3 + y^3 + 1 = 0$$

تفاوت بین تابع است

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 $x, y \neq 0$

$$\sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2 \Rightarrow \frac{x}{y} + \frac{y}{x} + 2\sqrt{\frac{x}{y} \cdot \frac{y}{x}} = 4 \Rightarrow \frac{x^2 + y^2}{xy} + 2 = 4 \Rightarrow \frac{x^2 + y^2}{xy} = 2$$

$$\Rightarrow x^2 + y^2 - 2xy = 0 \Rightarrow (x - y)^2 = 0 \Rightarrow x = y$$

$$\text{الف) } I. \frac{x-1}{x-2} \geq 0 \Rightarrow \frac{1}{+} \frac{1}{-} \frac{2}{+} \Rightarrow (-\infty, 1) \cup (2, +\infty)$$

$$\text{II} \cdot \frac{4-x}{x} \geq 0 \Rightarrow \frac{4}{+} \frac{1}{-} \frac{x}{+} \Rightarrow (0, 4]$$

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$$\text{الف) } \sqrt{x+1} - \sqrt{x-1} = \sqrt{3} - \sqrt{x} \Rightarrow \sqrt{x+1} - \sqrt{x-1} \geq 0 \Rightarrow \sqrt{x+1} \geq \sqrt{x-1}$$

$$I \cap II \Rightarrow 0 < x \leq 4 \Rightarrow [0, 4]$$

$$\text{الف) } I. x^2 - 7x + 12 \geq 0 \Rightarrow (x-1)(x-6) \geq 0 \Rightarrow \frac{1}{+} \frac{1}{-} \frac{6}{+} \Rightarrow (-\infty, 1] \cup [6, +\infty)$$

$$\text{II} \cdot x - 10x + 16 \geq 0 \Rightarrow 16 > 9x \Rightarrow \frac{16}{9} > x \Rightarrow (\frac{16}{9}, +\infty)$$

$$x \leq 1$$

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$$\text{الف) } \sqrt{\frac{(x-1)(x-6)}{(x-1)(x-2)}} \Rightarrow \frac{1}{+} \frac{1}{-} \frac{6}{+} \frac{2}{+} \Rightarrow (-\infty, 1] \cup [2, 6] \cup [10, +\infty)$$

$$2x^2 - 5x + 3 \geq 0 \Rightarrow \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{5 \pm \sqrt{25 - 24}}{4} = \frac{5 \pm 1}{4} = 1, \frac{3}{2}$$

$$2x^2 - 7x + 3 \geq 0 \Rightarrow \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{7 \pm \sqrt{49 - 24}}{4} = \frac{7 \pm 5}{4} = \frac{1}{2}, 3$$

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

$$\text{الف) } \frac{2x^2 - 5x + 3}{2x^2 - 7x + 3} \geq 0 \Rightarrow \frac{1}{+} \frac{1}{-} \frac{3}{+} \frac{1}{-} \frac{7}{+} \Rightarrow (-\infty, \frac{1}{2}) \cup (\frac{3}{2}, 3) \cup [3, +\infty)$$