

نام و نام خانوادگی نام و نام خانوادگی
پاسخنامه تشریحی تکلیف شماره ۱ کلاس یانفرد A

الف) $x^2 - 2x - 3 = 0 \rightarrow x^2 - 2x - 3 = 0 \rightarrow (x-3)(x+1) = 0 \rightarrow x_1 = 3, x_2 = -1$
ب) $x^2 - 8x - 3 = 0 \rightarrow x^2 - 8x - 3 = 0 \rightarrow (x-9)(x+1) = 0 \rightarrow x_1 = 9, x_2 = -1$
ج) $x^2 - 4x - 3 = 0 \rightarrow x^2 - 4x - 3 = 0 \rightarrow (x-4)(x+3) = 0 \rightarrow x_1 = 4, x_2 = -3$
د) $x^2 - 2x - 12 = 0 \rightarrow x^2 - 2x - 12 = 0 \rightarrow (x-8)(x+3) = 0 \rightarrow x_1 = 8, x_2 = -3$

الف) $x^2 - 2x - 14 = 0 \rightarrow (x-7)(x+2) = 0 \rightarrow x_1 = 7, x_2 = -2$
ب) $x^2 + 2x + 3 = 0 \rightarrow x^2 + 2x + 3 = 0 \rightarrow (x+1)(x+3) = 0 \rightarrow x_1 = -1, x_2 = -3$
ج) $x^2 + 2x + 3 = 0 \rightarrow \Delta = 2^2 - 4 \cdot 1 \cdot 3 = -8 < 0$ ریشه حقیقی ندارد
د) $x^2 + 2x - 2 = 0 \rightarrow \Delta = 2^2 - 4 \cdot 1 \cdot (-2) = 12 > 0 \rightarrow x_1 = \frac{-2 + \sqrt{12}}{2} = -1 + \sqrt{3}, x_2 = \frac{-2 - \sqrt{12}}{2} = -1 - \sqrt{3}$

$A \times B = \{(1,2), (1,3), (2,4), (2,5), (3,4), (3,5)\}$

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

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

الف) $m^2 = m + 2 \rightarrow m^2 - m - 2 = 0 \rightarrow (m-2)(m+1) = 0 \rightarrow m_1 = 2, m_2 = -1$

$m = 2 \rightarrow \text{غلط}$
 $m = -1 \rightarrow \text{غلط}$

ب) $m^2 = m + 2 \rightarrow m_1 = 2, m_2 = -1 \rightarrow (m-2)(m+1) = 0$

$m = 2 \rightarrow \text{غلط}$
 $m = -1 \rightarrow \text{غلط}$
یا اعدادی هستند که m تابع نیست

الف) $a^2 - 3a + 2 = 0 \rightarrow (a-1)(a-2) = 0 \rightarrow a_1 = 1, a_2 = 2$

$a_1 = 1 \rightarrow \text{غلط}$

$a_2 = 2 \rightarrow \text{غلط}$

$$\begin{aligned} x=1 & \rightarrow a+b=0 \\ x=1 & \rightarrow a+b=1 \end{aligned} \quad \left. \begin{array}{l} \\ \end{array} \right\} \begin{array}{l} a+b=1 \\ -a-b=0 \end{array}$$

جستگاه دو معادله و دو مجهول

$$\rightarrow a=1, b=-1$$

$$\rightarrow a \times b = -1 \times 1 = -1$$

$$x=k \rightarrow 2k-2 = 2-k \rightarrow 3k=2 \rightarrow k=\frac{2}{3}$$

$$x=1 \rightarrow y_1^2 - y_2^2 = y_1^2 - y_2^2 \rightarrow (y_1 - y_2)(y_1 + y_2) = 0$$

$$\rightarrow (y_1 - y_2) = 0 \rightarrow y_1 = y_2$$

$$\rightarrow (y_1 + y_2) = 0 \rightarrow y_1 = -y_2$$

$$f(x) = x^2 - 2x + 1 = (x-1)^2$$

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(۱۰-ب) $\sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2$

این عبارت تنها زمانی به قدر است که $\sqrt{\frac{x}{y}} = 1$ باشد پس

$\sqrt{\frac{x}{y}} = 1 \leadsto \frac{x}{y} = 1 \leadsto x = y$ و $(x, y \neq 0)$

