

نام و نام خانوادگی در آیین توکل پاسخنامه تشریحی تکلیف شماره کلاس

$$\begin{aligned} x^2 - 5x - 6 &\Rightarrow x^2 - 5x - 24 \Rightarrow (x-9)(x+3) \Rightarrow x_1 = 9, x_2 = -3 \Rightarrow x_1 = \frac{9}{2}, x_2 = -\frac{3}{2} \\ x^2 - 1x - 2 &\Rightarrow x^2 - 1x - 4 \Rightarrow (x-4)(x+1) \Rightarrow x_1 = 4, x_2 = -1 \Rightarrow x_1 = \frac{4}{2}, x_2 = -\frac{1}{2} \\ x^2 - 4x - 12 &\Rightarrow x^2 - 4x - 12 \Rightarrow (x-6)(x+2) \Rightarrow x_1 = 6, x_2 = -2 \Rightarrow x_1 = \frac{6}{2}, x_2 = -\frac{2}{2} \\ x^2 - 5x - 12 &\Rightarrow x^2 - 5x - 24 \Rightarrow (x-9)(x+3) \Rightarrow x_1 = 9, x_2 = -3 \Rightarrow x_1 = \frac{9}{2}, x_2 = -\frac{3}{2} \end{aligned}$$

$$\begin{aligned} x^2 - 5x - 12 &\Rightarrow (x-7)(x+2) \Rightarrow x_1 = 7, x_2 = -2 \\ 2x^2 + 5x + 2 &\Rightarrow \text{طایفه} \Rightarrow a+c=b \Rightarrow x_1 = -1, x_2 = -\frac{c}{a} = -\frac{2}{2} \\ x^2 + 2x + 3 &\Rightarrow \Delta = b^2 - 4ac = 4 - 12 = -8 \Rightarrow \Delta < 0 \Rightarrow \text{جواب ندارد} \\ 2x^2 + 3x - 2 &\Rightarrow \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-3 \pm \sqrt{33}}{4} \end{aligned}$$

$$\begin{aligned} A &= \{1, 2, 3\} \Rightarrow A \times B = 2 \times 3 = 6 \Rightarrow A \times B - B^2 = 6 - 4 = 2 \\ B &= \{2, 3\} \Rightarrow B^2 = 2 \times 2 = 4 \end{aligned}$$

$$\begin{aligned} f(x) &= \{(3, m^2), (2, 4), (-3, m), (-2, m), (3, m+2), (m, 4)\} \Rightarrow m^2 = 3 \Rightarrow m^2 = m+2 \Rightarrow m^2 - m - 2 = 0 \Rightarrow (m-2)(m+1) = 0 \Rightarrow m = 2 \text{ یا } m = -1 \\ \text{اگر } m = 2 \text{ باشد زوج مرتب } (2, 4) \text{ و } (2, 4) \text{ است. غلط} \\ \text{اگر } m = -1 \text{ باشد زوج مرتب } (-1, 3) \text{ و } (-1, 3) \text{ است. غلط} \\ g(x) &= \{(3, m^2), (2, 4), (m, 4), (3, m+2), (-2, m), (-1, 3)\} \Rightarrow m^2 = 3 \Rightarrow m^2 = m+2 \Rightarrow m^2 - m - 2 = 0 \Rightarrow (m+1)(m-2) = 0 \Rightarrow m = -1 \text{ یا } m = 2 \\ \text{اگر } m = -1 \text{ باشد زوج مرتب } (-1, 3) \text{ و } (-1, 3) \text{ است. غلط} \\ \text{اگر } m = 2 \text{ باشد زوج مرتب } (2, 4) \text{ و } (2, 4) \text{ است. غلط} \end{aligned}$$

$$\begin{aligned} \Rightarrow (1, a^2), (1, 2a-2) &\Rightarrow a^2 = 2a-2 \Rightarrow a^2 - 2a + 2 = 0 \Rightarrow (a-1)(a-1) = 0 \Rightarrow a = 1 \\ \text{اگر } a = 1 \text{ باشد زوج مرتب } (1, 4) \text{ و } (1, 4) \text{ است. غلط} \\ \text{اگر } a = 2 \text{ باشد زوج مرتب } (2, 4) \text{ و } (2, 4) \text{ است. غلط} \end{aligned}$$

$\left. \begin{array}{l} x \leq 1 \Rightarrow x^2 - 1 \\ 1 < x < 2 \Rightarrow ax + b \\ x \geq 2 \Rightarrow x^2 \end{array} \right\} \xrightarrow{x=1} \left. \begin{array}{l} x^2 = ax + b \Rightarrow \Lambda = 2a + b \\ x^2 - 1 = ax + b \Rightarrow 0 = a + b \end{array} \right\} \Rightarrow$ $2a + b - (a + b) = \Lambda \Rightarrow a = \Lambda \Rightarrow b = -\Lambda$	۶
$\left. \begin{array}{l} 2x - 2 \\ x \geq K \\ -cx \\ x \leq K \end{array} \right\} \xrightarrow{x=K} \left. \begin{array}{l} 2K - 2 = 2 - cK \\ 2K - 2 = 2 - cK \end{array} \right\} \Rightarrow K = \frac{4}{c}$	۷
الف) $\left. \begin{array}{l} y_1^2 - 6y_1 = x_1^2 - 6x_1 + 2 \\ y_2^2 - 6y_2 = x_2^2 - 6x_2 + 2 \end{array} \right\} \xrightarrow{x_1=x_2} y_1^2 - 6y_1 = y_2^2 - 6y_2 \Rightarrow y_1^2 - y_2^2 = 6(y_1 - y_2) \Rightarrow y_1 = y_2$ ب) $x + y = 2 \xrightarrow{x=0} y = 2 \Rightarrow y = \pm 2 \Rightarrow$ تابع نیست ج) $\cos x = 0 \Rightarrow y = \sqrt{1} \Rightarrow y = 1 \Rightarrow y = \pm 1 \Rightarrow$ تابع نیست د) $x=0 \Rightarrow y^2 + 1 = 0 \Rightarrow y = \pm i \Rightarrow$ تابع نیست	۸
الف) $\left. \begin{array}{l} \sqrt[3]{y_1} = -x_1^2 + 2x_1 - 2 \\ \sqrt[3]{y_2} = -x_2^2 + 2x_2 - 2 \end{array} \right\} \xrightarrow{x_1=x_2} y_1 = y_2$ ب) $\left. \begin{array}{l} y_1^2 + 2y_1 = 2x_1 \\ y_2^2 + 2y_2 = 2x_2 \end{array} \right\} \xrightarrow{x_1=x_2} y_1^2 + 2y_1 = y_2^2 + 2y_2 \Rightarrow y_1 = y_2$	۹
الف) $x=0 \Rightarrow (0)(\sin y) = (y)(\sin 0) \Rightarrow 0 = 0 \Rightarrow$ تابع نیست ب) $\frac{x}{y} + \frac{y}{x} + 2\sqrt{\frac{xy}{xy}} = 2 \Rightarrow \frac{x}{y} + \frac{y}{x} + 2 = 2 \Rightarrow \frac{x}{y} + \frac{y}{x} = 0 \Rightarrow x = -y \Rightarrow$ تابع نیست	۱۰