

نام و نام خانوادگی بیسویلا محمدی پاسخنامه تشریحی تکلیف شماره .../.../... کلاس ... یازدهم ...

ا) $4x^2 - 2x - 4 = 0$ $x^2 - 2x - 4 = 0$ $(x-4)(x+2) = 0$ $x = \begin{cases} \frac{4}{1} \\ -\frac{2}{1} \end{cases} = \begin{pmatrix} 4 \\ -2 \end{pmatrix}$
 ب) $3x^2 - 11x - 3 = 0$ $x^2 - 11x - 9 = 0$ $(x-9)(x+1) = 0$ $x = \begin{cases} \frac{9}{1} \\ -\frac{1}{1} \end{cases} = \begin{pmatrix} 9 \\ -1 \end{pmatrix}$
 ج) $5x^2 - 8x - 3 = 0$ $x^2 - 8x - 12 = 0$ $(x-4)(x+2) = 0$ $x = \begin{cases} \frac{4}{1} \\ -\frac{2}{1} \end{cases} = \begin{pmatrix} 4 \\ -2 \end{pmatrix}$
 د) $2x^2 - 2x - 12 = 0$ $x^2 - 2x - 6 = 0$ $(x-1)(x+3) = 0$ $x = \begin{cases} \frac{1}{1} \\ -\frac{3}{1} \end{cases} = \begin{pmatrix} 1 \\ -3 \end{pmatrix}$

الف) $x^2 - 2x - 15 = 0$ $(x-5)(x+3)$ $x \rightarrow \begin{cases} 5 \\ -3 \end{cases}$

ب) $x^2 + 2x + 3 = 0$ $x^2 + 2x + 3 = 0$ $(x+1)(x+3) = 0$ $x \rightarrow \begin{cases} -1 \\ -3 \end{cases}$

ج) $x^2 + 2x + 3 = 0$ $\Delta = 2^2 - 12 = -8 < 0$ $\Delta < 0$

د) $3x^2 + 3x - 2 = 0$ $\Delta = 3^2 + 24 = 33$ $x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-3 \pm \sqrt{33}}{6} = \frac{-1 \pm \sqrt{33}}{2}$

$$A \times B - B^r \longrightarrow \{(1,r) (1,r')\}$$

$$B^r = \{(r,r) (r,r') (r',r) (r',r')\}$$

$$A \times B = \{(1,r) (1,r') (r,r) (r,r') (r',r) (r',r')\}$$

الف) $f(u) = \{ (3, m^r) (2, 1) (-3, m) (-2, m) (3, m+2) (m, \varepsilon) \}$
 $m^r = m+2 \rightarrow m^r - m - 2 = 0 \quad m \rightarrow \boxed{-1} \rightarrow -\frac{c}{a} = 2x \quad m = -1$
 $\underline{m=-1} \rightarrow \{ (3, 1) (2, 1) (-3, -1) (-2, -1) (3, 1) (-1, \varepsilon) \} \checkmark$

ب) $g(u) = \{ (3, m^r) (2, 1) (m, \varepsilon) (3, m+2) (-2, m) (-1, 3) \}$
 $m^r = m+2 \quad m^r - m - 2 = 0 \quad m \rightarrow -\frac{c}{a} = 2$
 $\underline{m=-1} \rightarrow \{ (3, 1) (2, 1) (-1, \varepsilon) (3, 1) (-2, -1) (-1, 3) \} \times$
 $\underline{m=2} \rightarrow \{ (3, \varepsilon) (2, 1) (2, \varepsilon) (3, \varepsilon) (-2, 2) (-1, 3) \} \times$

به ازای هیچ مقادیری از m تابع نیست

$$f(u) = \{(1, a^r) (1, ra-r) (a^r, ra+r)\}$$

$$a^r = ra-r \rightarrow a^r - ra + r = 0 \quad a < \frac{1}{a} = r$$

$$\xrightarrow{a=1} \{(1, 1) (1, 1) (1, 2)\} \times$$

$a = r$

$$\xrightarrow{a=r} \{(1, r) (1, r) (r, 1)\} \checkmark$$

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Y

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$$f(x) = \begin{cases} x^2 - 1 & x \leq 1 \\ ax + b & 1 \leq x \leq 2 \\ x^2 & x \geq 2 \end{cases}$$

$$\begin{aligned} x=1 &\rightarrow \begin{cases} 0 = a+b \\ 2a+b=1 \end{cases} \rightarrow \begin{cases} a+b=0 \\ 2a+b=1 \end{cases} \Rightarrow \begin{cases} b=-1 \\ a=1 \end{cases} \\ x=2 &\rightarrow \end{aligned}$$

$$a \times b = -1$$

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$$f(x) = \begin{cases} 2x - 4 & x \geq K \\ 2 - 3x & x \leq K \end{cases}$$

$$\begin{aligned} x=K &\rightarrow 2K - 4 = 2 - 3K \\ \Delta K = 6 &\Rightarrow K = \frac{6}{5} \end{aligned}$$

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$$\text{الف) } y^2 - 4y = x^2 - 2x + 3 \quad x=1 \rightarrow y \begin{cases} 0 \\ \pm 4 \end{cases} \times \quad \boxed{\text{تابع نیست}}$$

$$(x-1)(x-3) = y(y-4)$$

$$\text{ب) } |x| + |y| = 4 \rightarrow |x| - 4 = -|y| \quad x = -1 \quad y = \pm 3 \times \quad \boxed{\text{تابع نیست}}$$

$$\text{ج) } |y| = \sqrt{1 - \cos x} \quad x = 0 \quad y = \pm \sqrt{\frac{1}{2}} \times \quad \boxed{\text{تابع نیست}}$$

$$\text{د) } y^2 + x^2 + 2x + 1 = 0$$

$$\begin{aligned} x^2 + 2x = -y^2 - 1 &\rightarrow x(x+2) = -(y^2+1) \\ x = -1 &\Rightarrow y = 0 \end{aligned} \quad \boxed{\text{تابع هست}}$$

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$$\text{الف) } \sqrt[3]{y} + x^2 = 2x - 2$$

$$\begin{cases} x_1^2 - 2x_1 + \sqrt[3]{y_1} + 2 = 0 \\ x_2^2 - 2x_2 + \sqrt[3]{y_2} + 2 = 0 \end{cases} \xrightarrow{x_1=x_2} \sqrt[3]{y_1} = \sqrt[3]{y_2} \Rightarrow y_1 = y_2 \quad \boxed{\text{تابع هست}}$$

$$\text{ب) } y^2 + 2y = 2x \quad \begin{cases} y_1^2 + 2y_1 = 2x_1 \\ y_2^2 + 2y_2 = 2x_2 \end{cases} \xrightarrow{x_1=x_2} y_1^2 + 2y_1 = y_2^2 + 2y_2 \Rightarrow y_1^2 - y_2^2 + 2y_1 - 2y_2 = 0$$

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$$(y_1 - y_2)(y_1^2 + y_1y_2 + y_2^2) + 2(y_1 - y_2) = 0 \Rightarrow (y_1 - y_2)(y_1^2 + y_1y_2 + y_2^2 + 2) = 0$$

$$\begin{aligned} \rightarrow y_1 - y_2 = 0 &\Rightarrow y_1 = y_2 \quad \boxed{\text{تابع هست}} \\ \rightarrow y_1^2 + y_1y_2 + y_2^2 + 2 = 0 &\Rightarrow \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-y_2 \pm \sqrt{-3y_2^2 - 8}}{2} \end{aligned}$$

شماره
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$$\text{الف) } x \sin y = y \sin x$$

$$x=0 \rightarrow y \in \mathbb{R} \quad \times \quad \boxed{\text{تابع نیست}}$$

$$\text{ب) } \left(\sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}}\right)^2 = 2 \rightarrow \frac{x}{y} + \frac{y}{x} + 2\sqrt{\frac{xy}{xy}} = 2 \rightarrow \frac{x^2 + y^2}{xy} = 2$$

$$x^2 + y^2 - 2xy = 0 \rightarrow (x - y)^2 = 0 \Rightarrow x = y \quad \boxed{\text{تابع هست}}$$

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