

$$1 \text{ الف) } 6x^2 - 8x - 6 = 0 \rightarrow x^2 - 8x - 36 = 0 \quad (1)$$

$$2 \rightarrow (x-9)(x+4) = 0 \rightarrow x = \frac{9}{1} \text{ / } \frac{-4}{1}$$

$$3$$

$$4 \text{ ب) } 3x^2 - 11x - 3 = 0 \rightarrow x^2 - 11x - 9 = 0$$

$$5 (x-9)(x+1) = 0 \rightarrow x = \frac{9}{1} = 9 \text{ / } \frac{-1}{1}$$

$$6$$

$$7 \text{ ج) } 4x^2 - 4x - 3 = 0 \rightarrow x^2 - 4x - 12 = 0$$

$$8 \rightarrow (x-6)(x+2) = 0 \rightarrow x = \frac{6}{1} \text{ / } \frac{-2}{1}$$

$$9$$

$$10 \text{ د) } 2x^2 - 8x - 12 = 0 \rightarrow x^2 - 8x - 12 = 0$$

$$11 \rightarrow (x-1)(x+3) = 0 \rightarrow x = \frac{1}{1} = 1 \text{ / } \frac{-3}{1}$$

$$12$$

$$13 \text{ الف) } x^2 - 2x - 15 = 0 \rightarrow (x-5)(x+3) = 0 \rightarrow x = -3, 5 \quad (2)$$

$$14 \text{ ب) } 2x^2 + 8x + 3 = 0 \rightarrow x^2 + 8x + 6 = 0$$

$$15 \rightarrow (x+3)(x+2) = 0 \rightarrow x = \frac{-3}{1} \text{ / } \frac{-2}{1} = -1$$

$$16 \text{ ج) } x^2 + 2x + 3 = 0 \rightarrow b^2 - 4ac = 4 - 12 < 0 \rightarrow \Delta < 0 \rightarrow \text{ليس له جذور}$$

$$17 \text{ د) } 3x^2 + 3x - 2 = 0 \rightarrow x = \frac{-3 \pm \sqrt{9 + 24}}{6} = \frac{-3 \pm \sqrt{33}}{6}$$

$$18 \text{ A} \times \text{B} = \text{B} \times \text{A} \quad (3)$$

$$19 \{ (1, 2), (1, 3), (2, 2), (2, 3), (3, 2), (3, 3) \}$$

$$20 = \{ (2, 2), (2, 3), (3, 2), (3, 3) \} = \{ (1, 2), (1, 3) \}$$

الف) $m^2 = m + 2 \rightarrow m^2 - m - 2 = 0$ $\begin{cases} m = +2 \times \\ m = -1 \checkmark \end{cases}$ (4)
 if $m = 2 \rightarrow 1 = 4 \times$ تابع نیست

ب) $m^2 = m + 2 \rightarrow m^2 - m - 2 = 0$ $\begin{matrix} m = -1 \\ m = 2 \end{matrix} \rightarrow$ تابع نیست (3)

if $m = 2 \rightarrow (2, 1) (2, 4) \times$ if $m = -1 \rightarrow (-1, 4) (1, 3) \times$ (5)

$a^2 - 3a - 2 \rightarrow a^2 - 3a + 2 = 0 \rightarrow (a-2)(a-1)$ $\begin{cases} a = 1 \times \\ a = 2 \checkmark \end{cases}$ (6)

$\rightarrow$ if $a = 1 \rightarrow 3 - 2 = 3 + 2 \times$ (7)

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

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

الف) if $x = 1 \rightarrow y^2 - 4y = 0 \rightarrow y(y - 4) = 0 \rightarrow y = 0 / y = 4 \times$ (12)

ب) if $x = 0 \rightarrow |y| = 3 \rightarrow y = \pm 3 \times$ تابع نیست (14)

ج) if $x = \frac{1}{4} \rightarrow |y| = \sqrt{\frac{1}{4}} \rightarrow y = \pm \sqrt{\frac{1}{4}} \times$ (15)

د) $y^2 + (x+1)^2 = 0 \rightarrow x = -1$ و $y = 0 \checkmark$ تابع هست (16)

الف) $\sqrt{y_1} = -x_1^2 + 2x_1 - 2$ $\begin{cases} x_1 = x_2 \\ \sqrt{y_1} = \sqrt{y_2} \end{cases} \rightarrow y_1 = y_2 \checkmark$ (17)

ب) $y_1^2 + 2y_1 = y_2^2 + 2y_2 \rightarrow y_1^2 - y_2^2 = 2y_2 - 2y_1$ (19)

$\rightarrow (y_1 - y_2)(y_1 + y_2 + 2) = -2(y_1 - y_2) \rightarrow (y_1 - y_2)(y_1 + y_2 + 2 + 2) = 0$ (20)

PARAMOUNT

$y_1 = y_2$

$\Delta < 0$
ریشه ندارد

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9 الف) if $x=0 \rightarrow y \in \mathbb{R}^n$ (10)

10 ب) if $x \neq 0, y \neq 0 \rightarrow \frac{x}{y} + \frac{y}{x} + 2\sqrt{1} = 2$

11 $\rightarrow \frac{x}{y} + \frac{y}{x} = 2 \Rightarrow x^2 + y^2 = 2xy \rightarrow x^2 - 2xy + y^2 = 0$

12 $\rightarrow (x-y)^2 = 0 \rightarrow x=y \checkmark$ عكس

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