

بارد هم د خمر C

تلف شماره

نظمه احمدي

١) $4x^2 - 9x - 4 = 0 \rightarrow x^2 - 9x - 4 = 0 \rightarrow (x-9)(x+4) = 0 \rightarrow x = \frac{9}{4} \text{ و } \frac{-4}{4} = -1$ ①

ب) $3x^2 - 11x - 4 = 0 \rightarrow x^2 - 11x - 4 = 0 \rightarrow (x-9)(x+1) = 0 \rightarrow x = \frac{9}{4} \text{ و } \frac{-1}{4} = -\frac{1}{4}$

ج) $4x^2 - 11x - 4 = 0 \rightarrow x^2 - 11x - 4 = 0 \rightarrow (x-4)(x+2) = 0 \rightarrow x = \frac{4}{4} \text{ و } \frac{-2}{4} = -\frac{1}{2}$

د) $2x^2 - 9x - 14 = 0 \rightarrow x^2 - 9x - 14 = 0 \rightarrow (x-1)(x+2) = 0 \rightarrow x = \frac{1}{4} \text{ و } \frac{-2}{4} = -\frac{1}{2}$ ②

١) $x^2 - 9x - 14 = 0 \rightarrow (x-9)(x+2) = 0 \rightarrow x = \frac{9}{4} \text{ و } \frac{-2}{4} = -\frac{1}{2}$ -٢

ب) $2x^2 + 9x + 4 = 0 \rightarrow x^2 + 9x + 4 = 0 \rightarrow (x+2)(x+4) = 0 \rightarrow x = -2 \text{ و } -4$

ج) $x^2 + 9x + 4 = 0 \rightarrow \Delta = 81 - 16 = 65 > 0 \rightarrow x = \frac{-9 \pm \sqrt{65}}{2}$ ③

د) $3x^2 + 11x - 4 = 0 \rightarrow \Delta = 121 - 48 = 73 > 0 \rightarrow x = \frac{-11 \pm \sqrt{73}}{6}$

$A = \{1, 2, 3\}, B = \{2, 3\} \Rightarrow A \times B = \{(1,2), (1,3), (2,2), (2,3), (3,2), (3,3)\}$ -٣

$B^c = \{(1,2), (1,3), (2,2), (2,3)\}$ ④

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

١) $f(x) = \{(x, m^2) | (x, 1), (-x, m), (-x, m), (x, m+2), (m, 1)\}$ ⑤

if $m = 2 \rightarrow (2, 4), (2, 1), (-2, 2), (-2, 2), (2, 4), (2, 1)$ ⑥

ب) $m^2 = m+2 \rightarrow m^2 - m - 2 = 0 \rightarrow m = -1 \text{ و } 2$ ⑦

if $m = -1 \rightarrow (-1, 1), (-1, 2), (-1, 2), (-1, 1), (-1, 1), (-1, 2)$ ⑧

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$f(x) = \{(1, a^2), (1, 3a-2), (a^2, 3a+2)\}$ -٤

if $a = 1 \rightarrow \{(1, 1), (1, 1), (1, 5)\}$ ⑨

if $a = 2 \rightarrow \{(1, 4), (1, 4), (4, 8)\}$ ⑩

if $x = 1 \rightarrow (1, a+b) \times (-1)$ -٥

if $x = 2 \rightarrow \Lambda = 2a+b$ ⑪

$\Lambda = a, b = -a \Rightarrow a \times b = \Lambda(-\Lambda) = -\frac{4a^2}{2}$

if $x = k \rightarrow 2k-3 = 4-3k \rightarrow 5k = 4 \Rightarrow k = \frac{4}{5}$ -٦

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ب) $|x| + |y| = 3 \xrightarrow{x=0} |y| = 3 \rightarrow y = \pm 3 \rightarrow x \text{ نیست}$

2) $y^2 + x^2 + 2x + 1 = 0 \rightarrow \underbrace{y^2}_{+} + \underbrace{(x+1)^2}_{+} = 0 \Rightarrow y=0 / x=-1 \checkmark$ تابع هست!

b.) $y'' + ry = \omega x \rightarrow \left. \begin{array}{l} y_1'' + ry_1 = \omega x_1 \\ y_r'' + ry_r = \omega x_r \end{array} \right\} \xrightarrow{x_1 = x_r} y_1'' + ry_1 = y_r'' + ry_r$

$y_1^3 - y_1^2 + 2(y_1 - y_2)z = 0 \rightarrow (y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2 + 2(y_1 - y_2)z) = 0$
 $(y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2 + 2z) = 0 \Rightarrow y_1 = y_2 \quad \checkmark$ تابع هست!
 ↪ همواره نیست

۱۰۔ x و y کے متبادلی میں توازنہ بنائیں۔
 مثال سے: $\frac{x}{y} \sin y = x \sin \frac{x}{y}$
 ان (1) $x \sin y = y \sin x$

b) $\sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2$ $\xrightarrow{*} \left(t + \frac{1}{t} - 2\right) \cdot t \rightarrow t^2 + 1 = 2t \rightarrow t^2 - 2t + 1 = 0 \rightarrow (t-1)^2 = 0$

$\sqrt{\frac{x}{y}} = t \quad \text{تابع هست!} \quad \sqrt{\frac{x}{y}} = 1 \rightarrow \frac{x}{y} = 1 \Rightarrow x = y \quad \leftarrow t=1$
 $(x, y \neq 0)$

ج-۴) $(3, m^2)$ و $(3, m+2) \leadsto m^2 = m+2 \leadsto m^2 - m - 2 = 0$

$m=2 \rightarrow (2, 1) \text{ و } (2, 4) \times$

$m=-1 \rightarrow (-1, 4) (-1, 3) \times$ به ازای هیچ مقدار m عبارت تانژنت!

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

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

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

