

تکلیف ۱

به نام خدا

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باز دھرم پرنس

۲. آئینہ صبر علی نوشتہ!

الف) $4x^2 - 5x - 4 = 0$

$4x^2 - 5x - 4 = 0$
 $\swarrow$
 -4×4

$(x-4)(x+1) = 0$

$x = \frac{4}{4} = 1$

$x = \frac{-1}{4} = -\frac{1}{4}$

(1) ✓
✓
✓
✓

ب) $3x^2 - 11x - 4 = 0 \Rightarrow x^2 - 11x - 4 = 0$

$\swarrow$
 $-4 \times 1 \Rightarrow$

$x = \frac{4}{1} = 4$
 $x = \frac{-1}{1} = -1$

ج) $4x^2 - 11x - 12 = 0 \Rightarrow x^2 - 11x - 12 = 0$

$\swarrow$
 $-12 \times 1 \Rightarrow$

$x = \frac{12}{1} = 12$
 $x = \frac{-1}{1} = -1$

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د) $2x^2 - 5x - 12 = 0 \Rightarrow x^2 - 5x - 12 = 0$

$\swarrow$
 $-12 \times 1 \Rightarrow$

$x = \frac{12}{1} = 12$
 $x = \frac{-1}{1} = -1$

الف) $(x-4)(x+1) = 0 \Rightarrow x_1, 2 = 4, -1$

(1)

ب) $a+c=b \Rightarrow x_1, 2 = -1, \frac{-b}{a}$

ج) $\Delta = b^2 - 4ac = 4 - 4(1)(1) = 0 \Rightarrow$ دو برابر

د) $\Delta = 9 - 4(-1)(1) = 13$ $x_1, 2 = \frac{-1 \pm \sqrt{13}}{4}$
 $1 \times 1 = 1$

$x_{1,2} = \frac{-b \pm \sqrt{\Delta}}{2a}$
 $x_1 = \frac{-1 + \sqrt{13}}{4}$
 $x_2 = \frac{-1 - \sqrt{13}}{4}$

Apple

Date: Sub:

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

(F)

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

(V)

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

ا) $m^T = m + 1 \Rightarrow m^T - m - 1 = 0 \Rightarrow m = -1$

(F)

if $m = 1 \Rightarrow (1,1)(1,2) \Rightarrow \text{خارج}$

$m = -1$

ب) $m^T = m + 1 \Rightarrow m^T - m - 1 = 0 \Rightarrow m = -1$ $\Rightarrow m \neq 1$

$m \neq -1 \Rightarrow (-1,1)(-1,2)$

$m, \text{ ليس له قيمة}$

(V)

$(1,1)(1,2)$

$$a^2 = 2a - 2 \Rightarrow a^2 - 2a + 2 = 0 \quad a = 1, 2 \quad | a = 2 | \quad (d)$$

if $a = 1 \Rightarrow (a^2, 2a + 2) = (1, 4)$ و اگر $a = 2 \Rightarrow (4, 6)$ ✓

$$x = 1 \Rightarrow x^2 - 1 = 1 - 1 = 0 \quad x = 2 \Rightarrow x^2 = 4$$

$$\Rightarrow ax + b = x^2 \Rightarrow ax + b = 2a + b$$

$$ax + b = -9x \quad x = 2 \quad \left. \begin{array}{l} 2a + b = 1 \\ a + b = 0 \end{array} \right\} \Rightarrow \begin{array}{l} a = 1 \\ b = -1 \end{array}$$

$$x = k \Rightarrow 2k - 2 = k - 2k \Rightarrow k = \frac{2}{d} \quad (v)$$

الف) $y'' - y' = 0 \Rightarrow x$ تابع $\Rightarrow$ تابع نسبت

محل فصل $\rightarrow$ if $x = 1 \Rightarrow y'' - 6y = 0 \Rightarrow y(y'' - 6) = 0 \Rightarrow y = \begin{cases} 0 \\ \pm \sqrt{6} \end{cases}$

ب) if $x = 0 \Rightarrow y = \pm 2 \Rightarrow$ تابع نسبت

ج) if $\cos x = 0 \Rightarrow y = \pm 1 \Rightarrow$ تابع نسبت

$\rightarrow x = \frac{\pi}{2} + k\pi$

د) $y'' = -(x^2 + 2x + 1) = -(x+1)^2 \Rightarrow y = 0, x = -1 \Rightarrow$ تابع نسبت

الف) $\begin{cases} \sqrt{y_1} = -x_1^2 + 2x_1 - 2 \\ \sqrt{y_2} = -x_2^2 + 2x_2 - 2 \end{cases} \Rightarrow \begin{cases} x_1 = x_2 \\ \sqrt{y_1} = \sqrt{y_2} \end{cases} \xrightarrow{\text{محل فصل}} y_1 = y_2 \Rightarrow$ تابع نسبت

ب) $\begin{cases} y_1^2 + 2y_1 = 2x_1 \\ y_2^2 + 2y_2 = 2x_2 \end{cases} \xrightarrow{x_1 = x_2} \begin{cases} y_1^2 + 2y_1 = y_2^2 + 2y_2 \\ y_1^2 - y_2^2 = 2y_2 - 2y_1 \end{cases}$

if $y_1 \neq y_2 \Rightarrow (y_1 - y_2)(y_1 + y_2 + 2) = 2(y_2 - y_1) \Rightarrow$

$\frac{y_1^2}{x^2} + \frac{y_2^2}{x^2} + \frac{y_1 y_2 + 2}{x} = 0 \Rightarrow \Delta = y_1^2 - 4(1)(y_1^2 + 2) = -3y_1^2 - 8 = 0$

$\Delta = 0, 1, 4 \Rightarrow$ $\Delta = 0$ است $\Rightarrow$ یعنی این معادله ریشه ای ندارد $\Rightarrow y_1 = y_2$

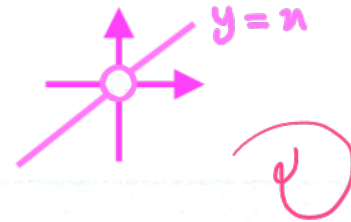
الف) $x = 2\pi \Rightarrow 2\pi \times \sin y = y_1 \sin 2\pi \Rightarrow \sin y = 0 \Rightarrow y = \{k\pi\}$

تابع نسبت $\Rightarrow$ Arman

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

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

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



ب) $\sqrt{\frac{x}{y}} = t \Rightarrow t + \frac{1}{t} = 2 \Rightarrow t^2 + 1 - 2t = 0$

$(t-1)^2 = 0 \Rightarrow t = 1$

شرط $(x, y \neq 0)$ یادداشت شود! $\Rightarrow x = y \Rightarrow$ تابع هست

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