

(- تلف ۱ - کعبه یادی)

۱۱, ۷۵

$$4x^2 - 9x - 4 = 0 \rightarrow x^2 - 9x - 4 = 0$$

$$(x-9)(x+4) \rightarrow x =$$

$$x = \frac{9}{4}, -\frac{4}{1}$$

$$3x^2 - 11x - 4 = 0 \rightarrow x^2 - 11x - 4 = 0$$

$$(x-9)(x+1)$$

$$x = 9, \frac{1}{3}$$

$$4x^2 - 5x - 3 = 0 \rightarrow x^2 - 5x - 12 = 0$$

$$(x-4)(x+3)$$

$$x = \frac{5}{2}, -\frac{3}{2}$$

$$3x^2 - 9x - 12 = 0 \rightarrow x^2 - 9x - 12 = 0$$

$$(x-1)(x+12)$$

$$x = 9, -\frac{3}{2}$$

$$x^2 - 9x - 12 = 0$$

$$(x-9)(x+12) = 0$$

$$x = 9, -12$$

$$x \leq \frac{v}{-p}$$

$$4x^2 + 9x + 3 = 0 \rightarrow x^2 + 9x + 4 = 0$$

$$(x+3)(x+1)$$

$$x = \frac{-9}{4}, -1$$

$$3x^2 + 9x + 3 = 0 \rightarrow \Delta = 9 - 4(3 \times 1) = 9 - 12 < 0$$

$$\Delta < 0 \rightarrow \text{ریشه ندارد}$$

$$3x^2 + 3x + 1 = 0 \rightarrow \Delta = 9 - 12 < 0 \rightarrow \Delta < 0$$

صورت دوال را استباه نوشتن! ریشه ندارد

$$A = \{1, 2, 3\} \quad / \quad B = \{2, 3\}$$

$$\underline{A \times B} = B^p$$

لیکھا ہوا دی

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

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

$$A \times B - B^p = \{ (1, 1), (1, 2) \}$$

$$f(x) = \{ (1, m), (2, m), (3, m), (4, m), (5, m), (6, m), (7, m), (8, m), (9, m), (10, m) \}$$

$$m^p = m + p \rightarrow m^p = m - p \rightarrow (m - p), (m + 1) \rightarrow m \rightarrow -1$$

$$m = 2 \rightarrow \{ (1, 2), (2, 2), (3, 2), (4, 2), (5, 2), (6, 2), (7, 2), (8, 2), (9, 2), (10, 2) \}$$

$$\alpha m = -1 \rightarrow \{ (1, -1), (2, -1), (3, -1), (4, -1), (5, -1), (6, -1), (7, -1), (8, -1), (9, -1), (10, -1) \}$$

$$m = 1$$

$$f(x) = \{ (1, 1), (2, 1), (3, 1), (4, 1), (5, 1), (6, 1), (7, 1), (8, 1), (9, 1), (10, 1) \}$$

$$m^p = m + p \rightarrow m = 1, -1$$

$$\alpha m = 1 \rightarrow \{ (1, 1), (2, 1), (3, 1), (4, 1), (5, 1), (6, 1), (7, 1), (8, 1), (9, 1), (10, 1) \}$$

$$\alpha m = -1 \rightarrow \{ (1, -1), (2, -1), (3, -1), (4, -1), (5, -1), (6, -1), (7, -1), (8, -1), (9, -1), (10, -1) \}$$

مقدار

$$f(x) = \{ (1, a^p), (1, a^{p-1}), (a^p, a^{p+1}) \}$$

و

$$a^2 = 3a - 1 \rightarrow a^2 - 3a + 1 = 0 \rightarrow (a-1)(a-2)$$

$$a = 1, 2$$

$$a=1 \rightarrow \{1, 1, 1, 1, 1, 1, 1, 1, 1, 1\}$$

$$\checkmark a=2 \rightarrow \{1, 1, 1, 1, 1, 1, 1, 1, 1, 1\}$$

$$a=2 \text{ (بازی)}$$

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

$$x=2 \text{ (بازی)} \rightarrow 1 = 2a + b$$

$$x=1 \text{ (بازی)} \rightarrow 0 = a + b$$

$$a = 1, b = -1$$

$$ax + b = 0$$

$$1x - 1 = 0 \rightarrow x = 1$$

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

$$k = ?$$

$$k \rightarrow 2k - 3 = 2 - 3k \rightarrow 5k = 1 \rightarrow k = \frac{1}{5}$$

$$x \text{ دایره } y^2 - 4y = x^2 - 4x + 3$$

$$\text{تابع نیست}$$

$$y(y^2 - 4) = (x-3)(x-1) \rightarrow x=1 \rightarrow y(y^2 - 4) = 0 \rightarrow$$

$$y = 0, \sqrt{4}, -\sqrt{4}$$

$$|x| + |y| = 3$$

$$|y| = 3 - |x| \rightarrow y = \pm (3 - |x|)$$

$$|y| = \sqrt{1 - \cos x} \rightarrow y = \pm \sqrt{1 - \cos x}$$

$$\text{تابع نیست}$$

$$\checkmark y^2 + x^2 + 2x + 1 = 0 \rightarrow y^2 + (x+1)^2 = 0 \rightarrow$$

$$x = -1, y = 0 \text{ (تابع نیست)}$$

$$\sqrt[3]{y} + x^2 = 2x - 2 \rightarrow \sqrt[3]{y} = -x^2 + 2x - 2 \quad \left. \begin{array}{l} \sqrt[3]{y_1} = \sqrt[3]{y_2} \\ y_1 = y_2 \end{array} \right\} \text{الف}$$

$$y^3 + 2y = 5x \quad \left. \begin{array}{l} y_1^3 = 5x - 2y \\ y_2^3 = 5x - 2y \end{array} \right\} y_1^3 = y_2^3 \quad y_1 = y_2$$

تعریف ریاض نوشته شده ناقص است!

$$x \sin y = y \sin x \rightarrow x = \mu \rightarrow \mu \sin y = y \sin \mu \quad \text{الف}$$

حل نفی

$$y = k\mu \quad \mu \sin y = 0$$

$$y = 0, \mu, 2\mu, \dots$$

تابع نیست

$$\sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2$$

ب

$$z + \frac{1}{z} = 2$$

$$\sqrt{\frac{x}{y}} = z$$

$$z^2 + 1 = 2z \rightarrow$$

$$z = 1 \leftarrow (z-1)^2 = 0 \leftarrow z^2 - 2z + 1 = 0$$

$$\sqrt{\frac{x}{y}} = 1 \rightarrow \frac{x}{y} = 1 \rightarrow x = y$$

تابع است

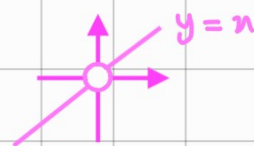
$$(x, y \neq 0)$$

$$x^2 + y^2 = 2 \quad \xrightarrow{\text{درج دوم}} \quad x = \frac{-1 \pm \sqrt{1 - (-1)}}{1} \rightarrow x_1 = \frac{-1 + \sqrt{2}}{1} \rightarrow x_2 = \frac{-1 - \sqrt{2}}{1}$$

$$(10-ب) \quad \sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2$$

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

$$\sqrt{\frac{x}{y}} = 1 \rightarrow \frac{x}{y} = 1 \rightarrow x = y \quad (x, y \neq 0)$$



ج ۹-) $y'' + 2y = \sin x$

$$\int y_1'' + 2y_1 = \sin x_1$$

$$x_1 < x_2 \rightarrow$$

$$y_1'' + 2y_1 = y_2'' + 2y_2$$

$$\int y_2'' + 2y_2 = \sin x_2$$

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

I $\rightarrow y_1 - y_2 = 0 \rightarrow y_1 = y_2$ زیر این حالت پیش شرطی نیست

II $\rightarrow y_1' + y_1 y_2' + y_2' + 2 = 0 \rightarrow y_1 = \frac{-y_2' \pm \sqrt{y_2'^2 - 4(y_2' + 2)}}{2}$ X

توجه! $y_1 = y_2$