

د) $6x^2 - 5x - 4 = 0 \Rightarrow x^2 - 5x - 36 = 0$ -1

$(x-9)(x+4) = 0$

$\frac{9}{-4} = -\frac{4}{9}$

و) $3x^2 - 11x - 9 = 0 \rightarrow x^2 - 11x - 9 = 0$

$(x-9)(x+1) = 0$

$\frac{9}{-1} = -\frac{1}{9}$

ج) $8x^2 - 8x - 3 = 0 \rightarrow x^2 - 8x - 12 = 0$

$(x-6)(x+2) = 0$

$\frac{6}{-2} = -\frac{1}{2}$

ر) $2x^2 - 2x - 12 = 0 \rightarrow x^2 - x - 6 = 0$

$(x-3)(x+2) = 0$

$\frac{3}{-2} = -\frac{2}{3}$

الف) $x^2 - 5x - 14 = 0 \rightarrow (x-7)(x+2) = 0$ -4

$\frac{7}{-2} = -\frac{2}{7}$

ب) $2x^2 + 5x + 3 = 0 \rightarrow (x+1)(2x+3) = 0$

$\frac{-1}{-\frac{3}{2}} = \frac{2}{3}$

$\frac{2x^2 + 5x + 3}{-2x^2 - 3x} = \frac{x+1}{2x+3}$

ج) $x^2 + 2x + 3 = 0$

$\Delta = 4 - 12 = -8 < 0$

$\frac{-2 \pm \sqrt{4-12}}{2} = \frac{-2 \pm \sqrt{-8}}{2}$

$= \frac{-2 \pm \sqrt{8}i}{2} = \frac{-2 \pm 2\sqrt{2}i}{2} = -1 \pm \sqrt{2}i$

د) $3x^2 + 3x - 2 = 0$

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

$$B^T \Rightarrow \{(2, 2) (2, 3) (3, 2) (3, 3)\}$$

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

$$6) m^r = m + r \rightarrow m^r - m - r = 0 \rightarrow m = -1$$

$m = 2$

$$i) f m = 2 \rightarrow (2, 1) (2, 4) \times$$

$$8) m^r = m + r \rightarrow m^r - m - r = 0 \rightarrow m = -1$$

$m = 2$

$$9) f m = 2 \rightarrow (2, 1) (2, 4) \times$$

$$11) f m = -1 \rightarrow (-1, 4) (-1, 3) \times$$

$$12) a^r = 3a - r \rightarrow a^r - 3a + r = 0 \rightarrow a = 1$$

$a = 2$

$$14) f a = 1 \rightarrow (1, 1) (1, 4) \times$$

$$15) f a = 2 \rightarrow (1, 4) (4, 1) \checkmark$$

$$17) f(1) \Rightarrow 1 - 1 = a + b \rightarrow a + b = 0$$

$$18) f(2) \Rightarrow 2a + b = 1$$

$$\begin{cases} a = 1 \\ b = -1 \end{cases}$$

$$a \times b = 1 \times (-1) = -1$$

$$f(k) \Rightarrow 2k - 3 = 4 - 3k \rightarrow \Delta k = 1$$

$k = \frac{1}{2}$

$$الف) \text{ if } a=1 \rightarrow y^3 - 4y = 0$$

$$y(y^2 - 4) = 0$$

$y = \pm 2$

$$ب) \text{ if } a=0 \rightarrow |y| = 3 \rightarrow y = \pm 3$$

$$ج) \text{ if } a = \frac{3k\pi}{\pi} \rightarrow |y| = \sqrt{k} \rightarrow |y| = 1 \rightarrow y = \pm 1$$

$y = \pm 1$

$$د) y^2 + (a+1)^2 = 0 \rightarrow a = -1 \text{ و } y = 0$$

$(-1, 0)$

$$\begin{cases} \sqrt{y_1} = -a^2 + 2a - 2 \\ \sqrt{y_2} = -a^2 + 2a - 2 \end{cases} \Rightarrow \begin{cases} \sqrt{y_1} = \sqrt{y_2} \\ y_1 = y_2 \end{cases}$$

$$ه) y_1^3 + 2y_1 = y_2^3 + 2y_2 \rightarrow y_1^3 - y_2^3 = 2y_2 - 2y_1$$

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

$$3(y_1 - y_2)(y_1 + y_1y_2 + y_2) = 0$$

$y_1 = y_2$

$\Delta < 0 \rightarrow -y \pm \sqrt{5}$

$$و) \text{ if } a=0 \rightarrow y \in \mathbb{R} \text{ تابع نیست}$$

$$ز) \frac{a}{y} + \frac{y}{a} + 2\sqrt{1} = 4 \rightarrow \frac{a}{y} + \frac{y}{a} = 2 \rightarrow \frac{a}{y} = 1 \rightarrow a = y$$

$a = y$

شرط: y و a یادت زده!

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

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

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

