

$$y = a(x-h) + k \rightarrow a(x+1)^2 + 9 \rightarrow 1 = 3(a+1) + 9 \rightarrow 1 = 19a + 9 \rightarrow a = -\frac{1}{9}$$

سؤال ۱! ←

$$y = -\frac{1}{9}(x+1)^2 + 9 = -\frac{1}{9}x^2 - x + \frac{17}{9}$$

سؤال ۲! $\Delta > 0 \rightarrow m^2 - 1(m+4) > 0 \rightarrow m^2 - 1m - 4 > 0 \rightarrow (m-1)(m+4) \rightarrow \frac{m}{+4} = \frac{-4}{-1} \rightarrow (\infty, -4) \cup (-1, \infty)$

$\Delta = 0 \rightarrow \frac{m+4}{1} > 0 \rightarrow m+4 > 0 \rightarrow m > -4$

$\Delta < 0 \rightarrow \frac{-m}{1} > 0 \rightarrow m < 0$

انتقال ۲ شرط $\rightarrow (-4, -1)$

$$\frac{-2m+1}{3} = \frac{3}{2-m} \rightarrow 9 = -4m + 2m^2 + 2 - m \rightarrow 2m^2 - 5m - 7 = 0$$

سؤال ۳! ←

رابطی $m^2 - 5m - 14 = 0 \rightarrow (m-7)(m+2) \rightarrow m < -\frac{1}{\frac{5}{2} \pm \frac{1}{2}} \rightarrow m = +\frac{7}{2}$

$$x^2 - x - 4 = 0 \rightarrow \frac{1}{x_1} + \frac{1}{x_2} = \frac{x_1 + x_2}{x_1 x_2} = \frac{1}{-4} = -\frac{1}{4} \quad / \quad x_1^2 + x_2^2 = 1 + 12 = 13$$

سؤال ۴! ←

$$S = x_1^2 + x_2^2 + \frac{1}{x_1} + \frac{1}{x_2} = -\frac{1}{4} + 13 = 12 \frac{3}{4} = \frac{51}{4}$$

$$P = (x_1 x_2)^2 + x_1^2 + x_2^2 + \frac{1}{x_1 x_2} = -9 + 9 - \frac{1}{4} = -\frac{1}{4} = -\frac{221}{4}$$

$$y = x^2 - \frac{51}{4}x - \frac{221}{4} \rightarrow 4x^2 - 51x - 221$$

$$\sqrt{x^2} = t^2 \quad \sqrt{x} = t \quad \left(t^2 + \frac{1}{t^2} + 1\right)(t^2 - 1) = 2t$$

$$\rightarrow \left(\frac{1+t^2+t^4}{t^2}\right)(t^2-1) = 2t \quad \text{اتحاد دیکر و فیکر} \rightarrow (t^4-1)(t^2+t^2+1) = t^4-1$$

سؤال ۵! ←

$$\rightarrow 2t = \frac{t^4-1}{t^2} \rightarrow 2t^3 + t^4 - 1 \rightarrow t^4 - 2t^3 - 1 = 0 \quad \frac{t^4}{t^2} = 2 \rightarrow t^2 = 2 \rightarrow t = \pm\sqrt{2}$$

$$\rightarrow z < \left. \begin{matrix} -b+\sqrt{b^2-4ac} \\ -b-\sqrt{b^2-4ac} \end{matrix} \right\} 1 \pm \sqrt{2} \rightarrow y = t^2 = 2 \rightarrow 1 \pm \sqrt{2} \rightarrow x_2 + x_1 = 1 \pm 1 = 2$$

$$r^2 x \times x = \frac{r}{r} \rightarrow r^2 x^r = \frac{r}{r}$$

$$r^2 x + x = \frac{a}{r} \rightarrow r^2 x = \frac{a}{r} - (r^2 x)^r, 14 r^2 = \frac{a^r}{a} \rightarrow \frac{r^2}{a} = \frac{a^r}{a} \rightarrow a = \pm 1, \boxed{1, -1, 14}$$

مسئله ۶

$$\Delta \geq 0 \rightarrow (r+ra)^r \geq 0 \rightarrow \frac{a+ra}{r+ra} \rightarrow [-0.5, \infty) \left. \begin{array}{l} \\ \end{array} \right\} \cap \rightarrow (1, 0, 0)$$

مسئله ۷

$$\frac{c}{a} = \frac{-b}{a} = \frac{-(r+ra)}{a} = \frac{a+1.0}{-1+1} \rightarrow (1, 0, 0)$$

$$\frac{-b}{ra} = 1 = \frac{a}{r} \rightarrow a = r \rightarrow x = x^r + rx \bar{x}^r \rightarrow (x+r)(x-1) \rightarrow x < -r$$

مسئله ۸

$$\left. \begin{array}{l} y_{x=1} \rightarrow -1-r+b = b-r \\ y_{x=-r} \rightarrow -1+r+b = b-r \end{array} \right\} b-r=1, b=r \rightarrow a \times b = r \times r = 1$$

$$\frac{-a}{ra} + 1 = \frac{a}{r} \rightarrow \frac{a}{r} = \frac{1}{r} \rightarrow a = 1$$

مسئله ۹

$$(x+0.5)(y+0.5) = xy + 0.5 \frac{(x+y)}{2} + 0.25 = -r - \frac{1}{r} + \frac{1}{r} = -r = \frac{b}{r} \rightarrow b = -r$$

$$\left[\frac{ab}{r} \right] = \left[\frac{-r}{r} \right] = -1$$

$$x^r + 4x + m = x^r + 2x - 3m \rightarrow 2x + 4m = 0 \rightarrow x + 2m = 0 \rightarrow x = -2m \rightarrow m = -x$$

مسئله ۱۰

$$\rightarrow x^r + 4x - x = 0 \rightarrow x^r + 3x = 0 \rightarrow x(x+0) = 0 \rightarrow m = -1, \boxed{m \neq 0} \rightarrow$$

مسئله ۱۱

$$x^r + 4x + 1 = 0 \rightarrow (x+1)(x+1) \rightarrow x < -1$$

$$x^r + 2x - 1 = 0 \rightarrow (x+1)(x-1) \rightarrow x < -1$$

$$\left. \begin{array}{l} \\ \\ \end{array} \right\} \begin{array}{l} \text{نکته} \\ \text{اختلافی نیست} \end{array} = 3 - (-1) = 4$$