

$$1 \quad 3x^2 - ax + 1 = 0 \quad S = \frac{a}{3} \quad P = \frac{1}{3} \quad (1)$$

$$2 \quad 3\alpha\beta = 3P = \frac{1}{3} \quad \beta = \frac{1}{9} \Rightarrow \beta = \frac{1}{9}$$

$$3 \quad S = \alpha + \beta = \frac{a}{3} \quad a = 12\beta$$

$$4 \quad \alpha\beta = \begin{cases} 12\alpha \cdot \frac{1}{9} = 1 & 1 - (-1) = 1 \end{cases}$$

$$5 \quad \begin{cases} 12\alpha \left(\frac{1}{9}\right) = -1 \end{cases}$$

$$7 \quad 3x^2 - (m+1)x + 1 = 0 \Rightarrow \frac{1}{\sqrt{a}} + \frac{1}{\sqrt{b}} = d \quad (2)$$

$$8 \quad \sqrt{\frac{1}{a}} + \frac{1}{\sqrt{b}} = d$$

$$9 \quad 1 + m + 1 = 2d \rightarrow m = -1$$

$$10 \quad mx^2 + 2x + 1 \rightarrow -2x + 3x + 1 = 0 \quad \frac{1}{m} = -2$$

$$11 \quad 3x^2 + 4x - 1 = 0 \quad \alpha + \beta = 1 \quad \alpha\beta = -\frac{1}{3} \quad (3)$$

$$12 \quad x^2 - x - 1 = 0 \rightarrow (x+1)(x-2) = 0 \quad \begin{cases} x = 2 \\ x = -1 \end{cases}$$

$$13 \quad \xrightarrow{x=-1} 3(-1)^2 + 4 + 9 - 1 = 0 \rightarrow 3 + 4 = 0 \rightarrow 4 = -3$$

$$14 \quad x^2 + 4x + a = 0 \quad \alpha < \beta < 0 \quad \alpha + \beta = -4$$

$$15 \quad 3\alpha^2 + 12\beta^2 = 12\sqrt{2} + 12 \quad a > 0$$

$$16 \quad 3(\alpha^2 + \beta^2) + \alpha^2 \rightarrow 3(3 - 2a) + 9 + (9 - a) + 4\sqrt{1-a}$$

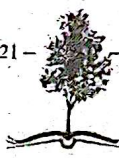
$$17 \quad = 12\sqrt{2} + 12 \quad \alpha = -3 \pm 2\sqrt{1-a}$$

$$18 \quad \rightarrow \beta = -3 + \sqrt{1-a}$$

$$19 \quad 9 - 2a + 4\sqrt{1-a} = 12\sqrt{2} + 12$$

$$20 \quad \xrightarrow{a=1} 9 - 2a + 4\sqrt{1-a} = 12\sqrt{2} \Rightarrow \sqrt{1-a} = 2\sqrt{2}$$

$$21 \quad 1 - a = 1 \Rightarrow a = 0$$



Senobar

$$x^T - Vx^T - a = 0 \Rightarrow P = -a$$

(A)

$$\Delta = F^T + F(x) = 99$$

$$V \pm \sqrt{99} \rightarrow S = 0$$

$$x^T - x^T S P + x^T S = x^T \left(\frac{V + \sqrt{99}}{2} \right)^T - 0 + 0 \Rightarrow$$

$$\frac{F^T + 99 + 1 \pm \sqrt{99}}{2} = \frac{a^T + V \sqrt{99}}{2}$$

$$x^T - ax + b = 0 \rightarrow x_1, x_2$$

(S)

$$x_1 x_2^T + ax - 9 = 0 \Rightarrow x_1', x_2' = x_1 - \frac{1}{r}, x_2 - \frac{1}{r}$$

$$x_1 \left(x_2 - \frac{1}{r} \right)^T + a \left(x_2 - \frac{1}{r} \right) - 9 = x_1 x_2^T - ax - b$$

$$x_1 x_2^T - x_1 x_2 + \frac{a}{r} + ax - \frac{a}{r} - 9 = x_1 x_2^T - ax + b$$

$$\Rightarrow -9 = +b \Rightarrow b = -9$$

$$x_1 x_2^T - ax + 9 = x_1 x_2^T + ax - 9 \Rightarrow a = +1$$

$$ax^T - ax - b = 0 \Rightarrow S = 1 \quad P = \frac{-b}{a}$$

(V)

$$\alpha + \beta = 1 \quad \alpha \beta = \frac{-b}{a}$$

$$\Rightarrow \beta = 1 - \alpha$$

$$F_0(1 - \alpha)^T + F_0 \alpha^T - F_0(1 - \alpha) = 1V \Rightarrow$$

$$F_0 + F_0 \alpha^T - F_0 \alpha^T + F_0 \alpha^T - F_0 + F_0 \alpha = 1V$$

$$F_0 \alpha^T - F_0 \alpha + V = 0 \Rightarrow S = 1, P = \frac{F_0}{F_0} = \frac{1}{F_0}$$

$$|\alpha \beta| = \sqrt{S^T - FP} = \frac{r}{\sqrt{a}}$$



$$1 \quad x^r - (a+1)x + a = 0 \rightarrow \text{مميزه} \rightarrow y_{k+1} \text{ و } y_{k-1} \quad (1)$$

$$2 \quad x^r - (r+1)x + b = 0 \rightarrow \text{مميزه} \rightarrow y_z, y_z + r$$

$$3 \quad a = (y_k - 1)(y_{k+1}) = y_k^r - 1 \quad y_k^r = y_k$$

$$4 \quad 0 \neq 1 = y_k \rightarrow a = y_k - 1 \Rightarrow y_k^r - y_k = 0 \quad a = r$$

$$K=1 \quad K=0$$

$$5 \quad b = y_z^r + y_z \quad r+1 = y_z + r$$

$$6 \quad a = r \Rightarrow 1 = y_z + r \rightarrow z = r \Rightarrow b = y_z^r$$

$$7 \quad |a - b| = |r - y_z| = r$$

$$8 \quad (9)$$

$$9 \quad x^r + x - 1 - m^r = 0 \quad s^r - rP = \alpha^r + \beta^r$$

$$10 \quad s = -1 \quad P = -m^r - 1$$

$$11 \quad s^r - rP = (-1)^r - r(-m^r - 1) = 1 + rm^r + r = rm^r + r$$

$$12 \quad rm^r \geq 0 \rightarrow rm^r + r \geq r \rightarrow \min = r$$

$$13 \quad (10)$$

$$14 \quad A(r, y) \quad B(-a, y) \quad \text{مميزه} = \#1$$

$$15 \quad \text{مميزه} = \frac{r-a}{r} = -1 \rightarrow s(-1, 1)$$

$$16 \quad y = a(x+1)^r + 1 \quad y=0 \rightarrow a(x+1)^r = -1 \rightarrow x+1 = \sqrt[r]{\frac{-1}{a}}$$

$$17 \quad \alpha + \beta = -r \rightarrow s^r - rP = a \quad s - rP = a \Rightarrow P = \frac{-1}{r}$$

$$18 \quad P = (-1)^r - \left(\sqrt[r]{\frac{-1}{a}}\right)^r = 1 + \frac{1}{a} = \frac{-1}{r}$$

$$19 \quad \Rightarrow \frac{1}{a} = -\frac{r}{r} \Rightarrow a = -\frac{r}{r}$$

$$20 \quad \rightarrow y = \frac{r}{r} (x+1)^r + 1 \quad x=0 \rightarrow y = \frac{1}{r} \quad (0, \frac{1}{r})$$

