

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

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

$$3 \quad S = \alpha + \beta = \frac{a}{3} \quad a = 12\beta \quad (2)$$

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

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

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

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

$$9 \quad 12 + m + 1 = 2a \rightarrow m = -1 \quad (4)$$

$$10 \quad mx^2 + 12x + 1 = 0 \rightarrow -12x + 3m + 1 = 0 \quad \frac{1}{m} = -12$$

$$11 \quad 3x^2 + 12x - 12x - 1 = 0 \quad \alpha + \beta = 1 \quad \alpha\beta = -1 \quad (5)$$

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

$$13 \quad \xrightarrow{x=-1} 3(-1)^2 + 12 + 9 - 1 = 0 \rightarrow 3 + 12 = 0 \rightarrow 15 = 0 \quad (6)$$

$$14 \quad x^2 + 9x + a = 0 \quad \alpha < \beta < 0 \quad \alpha + \beta = -9$$

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

$$16 \quad 3(\alpha^2 + \beta^2) + \alpha^2 \rightarrow 3(39 - 12a) + 9 + (9 - a) + 6\sqrt{1-a}$$

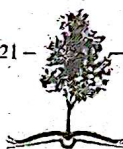
$$17 \quad = 12\sqrt{2} + 12 \quad \alpha = -9 \pm 2\sqrt{9-a} \quad -9 - \sqrt{1-a}$$

$$18 \quad \rightarrow \beta = -9 + \sqrt{9-a}$$

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

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

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



Senobar

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

(A)

$$\Delta = F^2 + E(a) = 99$$

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

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

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

9

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

(S)

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

1, 1/9

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

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

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

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

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

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

(V)

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

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

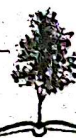
$$F_0(1 - \alpha)^T + F_0 \alpha^T - F_0(1 - \alpha) = 1V \Rightarrow$$

9

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

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

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



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

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

$$3 \quad a = (x^k - 1)(x^{k+1} - 1) = x^{k^2} - 1 \quad \Rightarrow x^{k^2} - x^k = 0 \quad a = 1 \quad (5)$$

$$4 \quad 0 \neq 1 = x^k \rightarrow a = x^k - 1$$

$$5 \quad b = x^r - x^{r-1} - x^{r-2} - \dots - x - 1 \quad r+1 = x^r - x^{r-1} - x^{r-2} - \dots - x - 1$$

$$6 \quad \Rightarrow 1 = x^r - x^{r-1} - x^{r-2} - \dots - x - 1 \Rightarrow b = x^r$$

$$7 \quad |a - b| = |x^r - x^r| = 0$$

$$8 \quad (9)$$

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

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

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

$$12 \quad rm^r \geq 0 \rightarrow rm^r + r + 1 \geq r + 1 \rightarrow \min = r + 1$$

$$13 \quad (10)$$

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

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

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

$$17 \quad x + \beta = -r \rightarrow s^r - rP = a \quad s - rP = a \Rightarrow P = \frac{-1}{r} \quad (5)$$

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

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

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



Genobar