

الف) $y = 3x^2 - 2x \rightarrow a > 0$
 $x_s = -\frac{b}{2a} = \frac{1}{3} \rightarrow y_s = 3 \times \frac{1}{9} - \frac{2}{3} = -\frac{1}{3}$

ب) $y = -x^2 + 4x \rightarrow a < 0$
 $x_s = -\frac{b}{2a} = \frac{4}{-2} = -2 \rightarrow y_s = -(-2)^2 + 4(-2) = 4$

الف) $y = 2x^2 - 4x + 2 \rightarrow a > 0$
 $x_s = -\frac{b}{2a} = \frac{2}{4} \rightarrow y_s = \frac{4ac - b^2}{4a} = \frac{14 - 16}{4} = -\frac{1}{4}$

ب) $y = -x^2 + 4x - 1 \rightarrow a < 0$
 $x_s = -\frac{b}{2a} = \frac{2}{-2} = -1 \rightarrow y_s = -(-1)^2 + 4(-1) - 1 = 3$

$x^2 - 4x + 4 = 0 \rightarrow s = -\frac{b}{a} = \frac{4}{1} = 4, p = \frac{c}{a} = -\frac{4}{1} = -4, \alpha + \beta = \frac{\sqrt{\Delta}}{1a}$

الف) $\frac{\alpha + \beta}{\alpha - \beta} = \frac{1}{\sqrt{17}}$

ب) $\alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta = 16 - 2(-4) = 24$

ج) $\alpha^2 + \beta^2 = (\alpha + \beta)(\alpha^2 - \alpha\beta + \beta^2) = 10$

د) $\alpha^2 - \beta^2 = (\alpha - \beta)(\alpha + \alpha\beta + \beta^2) = 4\sqrt{17}$

$y = (m-2)(m^2 - am + a) \rightarrow$ محور دارد نقطه تقاطعی که در بین ریشه ها می باشد

$\Delta < 0$ پس $m=2$ $0 < a \leq 4$

$a^2 - 4a < 0 \rightarrow a(a-4) < 0 \rightarrow 0 < a < 4$ اگر $a=4$ $x^2 - 4x + 4 = (m-2)^2$

$\rightarrow y = (m-2)(m-2)^2 = (m-2)^3$ نمودار تقاطعی در عنوان ریشه ها می باشد

$2x^2 - 12x - a = 0 \rightarrow \alpha + \beta = 6, \alpha\beta = -\frac{a}{2}$

$\alpha^2 + \beta^2 - 4\alpha = \sqrt{17} \xrightarrow{\beta = 6 - \alpha} 2\alpha^2 + (6 - \alpha)^2 - 4\alpha = \sqrt{17} \rightarrow 2\alpha^2 - 12\alpha - a = 0$

$\alpha^2 - 4\alpha + 3 = 0$

$(\alpha - 1)(\alpha - 3) = 0 \rightarrow \begin{cases} \alpha = 3, \beta = 1 \\ \alpha = 1, \beta = 3 \end{cases}$

$\alpha\beta = 3 \rightarrow 3 = -\frac{a}{2} \rightarrow a = -6$

ل ریشه بزرگتر باشد: $\frac{a}{2} = \frac{-4}{2} = -2$

موتلفهاس: $N = \{1, 2, 3, \dots\}$ if $a=r$ $A(1,1), B(1,1)$

$A(xa+r, a-r) \rightarrow$ $x_s = \frac{a+1}{r} = a \rightarrow s(a,r)$

$B(x-r, a-r) \rightarrow$ $x_s = \frac{a+1}{r} = a$

$s(b, b-r) \rightarrow b=a$

$8 = a(m-x_s)^r + y_s = a(m-a)^r + r \cdot \beta(1,1) \rightarrow a(1-a)^r + r = 1 \rightarrow a = -\frac{1}{\lambda}$

$8 = -\frac{1}{\lambda}(m-a)^r + r \xrightarrow{x=0} -\frac{1}{\lambda} \times r a + r = -\frac{1}{\lambda} \rightarrow \frac{1}{\lambda}$

$am^r - am - b = 0 \rightarrow p = -\frac{b}{a}$

$s = \frac{a}{a} = -1$

$\epsilon \cdot \beta^r + r \cdot \alpha^r - r \cdot \beta = 1V$

$r \cdot \beta^r + r \cdot \alpha^r - 1 \cdot \beta^r - 1 \cdot \alpha^r - r \cdot \beta = 1V$

$r \cdot (\alpha^r + \beta^r) - 1 \cdot (\alpha - \beta)(\beta - \alpha) - r \cdot \beta = 1V$

$r \cdot 4 \cdot \frac{b}{a} - 1 \cdot (\alpha + \beta) = 1V$

$\frac{4-b}{a} = -r \rightarrow 4 \cdot b = -r a$

$b = -\frac{1}{r} a$

$|\alpha - \beta| = \frac{\sqrt{\Delta}}{|a|}$

$\Rightarrow \frac{\sqrt{a^2 - 4ab}}{|a|} = \sqrt{1 - \frac{1}{a}} = \sqrt{\frac{\epsilon}{a}} = \frac{r}{\sqrt{a}}$

$x_s = \frac{-a+1}{r} = -r \rightarrow f(m) = a(m+r)^r - \frac{1}{r}$

$f'(m) = \frac{r}{r} = a(1+r)^r - \frac{1}{r}$

$(1, \beta) \in f(m) \rightarrow \frac{1}{r}(1+r)^r - \frac{1}{r} \Rightarrow \beta = \frac{r}{r}$

$a = \frac{1}{r}$

$x^r + 4m + a \rightarrow \alpha < \beta < 0$

$\alpha^r + 2\beta^r = 12\sqrt{r} + 11a$

$\alpha^r + \beta^r = 24 - 2a$

$\Delta = 24 - 2a$

$\alpha = -r - \sqrt{a-a}$

$\beta = -r + \sqrt{a-a}$

$\alpha^r = 11 - a + 4\sqrt{a-a}$

$\beta^r = 11 - a + 4\sqrt{a-a}$

$\alpha^r + \beta^r = 22 - 2a + 8\sqrt{a-a} = 24 - 2a \rightarrow 2\sqrt{a-a} = 2 \rightarrow \sqrt{a-a} = 1 \rightarrow a-a = 1 \rightarrow a = 1$

$\sqrt{\frac{1}{\alpha}} + \sqrt{\frac{1}{\beta}} = a \rightarrow \frac{1}{\alpha} + \frac{1}{\beta} + r = \frac{\alpha + \beta}{\alpha\beta} = 2\sqrt{\frac{1}{\alpha\beta}}$

$m^2 + 2m + r = 0 \rightarrow 4m^2 - (m+1)\alpha + 1 = 0$

$-\frac{b}{c} + r\sqrt{\frac{a}{c}} = \frac{m+1\alpha}{1} + r\sqrt{\frac{r4}{1}} = m + r4 \rightarrow m + r4 = r a$

$m = -1$

$\frac{s}{p} + r\sqrt{\frac{1}{p}}$

$-2^r + 2m + r \rightarrow$ حاصل ضرب $\frac{r}{r}$