

$$\begin{aligned} x &= x+y = \dots \\ \alpha + \beta &= \frac{-b}{a} = -\omega \\ \alpha &= \omega - \beta \end{aligned} \quad \left\{ \begin{array}{l} \frac{\alpha + \beta}{\alpha \beta^r} \end{array} \right.$$

11

الزيتون

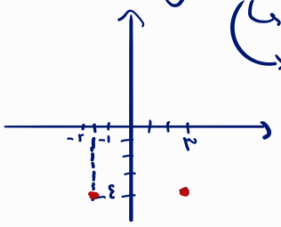
1

$$\left\{ \begin{array}{l} \beta - \alpha \beta + r = 0 \rightarrow \beta = \alpha \beta - r \\ \beta = \frac{\beta^r}{\alpha} + \frac{r}{\alpha} \end{array} \right\} \begin{array}{l} \beta^r = \beta^r \times \beta \\ \beta^r = (\alpha \beta - r)(\beta) = \alpha \beta^r - r\beta = \omega(\alpha \beta - r) - r\beta = r\alpha \beta - 1 - r\beta - r\beta - 1 \\ \beta^r = \beta^r \cdot \beta = (r\alpha \beta - 1)(\beta) = r\alpha \beta^r - 1 \cdot \beta = r\alpha \beta^r - 1 \cdot \beta = 11\alpha \beta - 14 - 1 \cdot \beta = 1 \cdot \alpha \beta - 14 \\ \beta^r = \beta^r \cdot \beta = (1 \cdot \alpha \beta - 14)(\beta) = 1 \cdot \alpha \beta^r - 14\beta = 1 \cdot \alpha(\alpha \beta - r) - 14\beta = \alpha^2 \alpha \beta - 11 - 14\beta = 14\alpha \beta - 11 \end{array}$$

$$\frac{r - \epsilon \beta + 14\alpha \beta - 11}{r\alpha \beta - 1} = \frac{14(r\alpha \beta - 1)}{r\alpha \beta - 1} = 14 \quad \checkmark$$

2

$$ax^r + bx + c = y \rightarrow ax^r + bx + c = -\epsilon$$



$$\left\{ \begin{array}{l} (-1, 1) \\ r \end{array} \right\} \begin{array}{l} r, r\alpha a - 1, ab + c = -\epsilon \\ 9a + 11b + c = -1 \\ 14\alpha a + 14b = 0 \\ 14a + 11b = 0 \\ 14a + 11b = 0 \rightarrow a = -\frac{11}{14}b \end{array}$$

2

$$\begin{aligned} -ax^r + bx + c &= 0 \\ \alpha + \beta &= \frac{-b}{a} = \frac{-r\beta}{-\frac{11}{14}b} = \frac{r\beta}{\frac{11}{14}b} = \frac{14}{11}r \quad \checkmark \end{aligned}$$

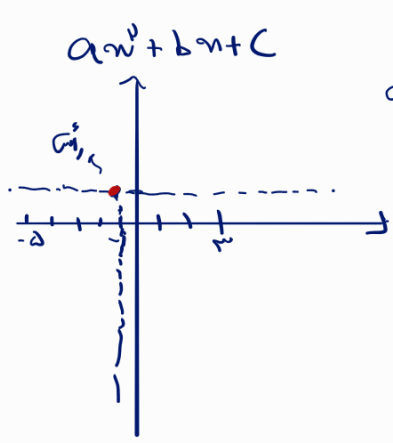
2

$$\begin{aligned} \alpha - \beta &= \frac{\sqrt{b^2 - 4ac}}{a} = \frac{\epsilon}{r} K \\ &= \sqrt{\epsilon K^r - 10} = \sqrt{\epsilon(K^r - 10)} = (r\sqrt{K^r - 10}) = \frac{\epsilon}{r} K \rightarrow \epsilon K^r - 10 = \frac{1}{q} K^r \rightarrow \frac{14}{q} K^r - \frac{1}{q} K^r = r \rightarrow \frac{13}{q} K^r = r \rightarrow K^r = q \rightarrow \left[ \frac{K^r}{r} \right] = \frac{q}{r} = \epsilon \end{aligned}$$

✓

2

3



$$\begin{aligned} \omega_1, \quad & \frac{-b}{r\alpha} = -1 \rightarrow -b = -r\alpha \\ & b = r\alpha \\ & a - b + c = -1 \\ & a - r\alpha + c = -1 \rightarrow -a + c = -1 \\ & \hookrightarrow c = a - 1 \end{aligned}$$

1, 2, 3

3

$$\begin{aligned} \alpha^r + \beta^r - r\alpha\beta &= \alpha - r\alpha\beta \rightarrow (\alpha + \beta)^r = \alpha - r\alpha\beta \\ \alpha\beta &= \frac{c}{a} \rightarrow \frac{a-1}{a} \end{aligned} \quad \left\{ \begin{array}{l} \epsilon = \alpha - r\alpha\beta \\ r\alpha\beta = 1 \rightarrow \frac{a-1}{a} = \frac{1}{r} \rightarrow a = r\alpha - r \rightarrow a = r \end{array} \right.$$

$$\begin{aligned} c &= ? \rightarrow 0, 1, 2 \\ c &= a - 1 = r - 1 = 1 \end{aligned}$$

$$\alpha \beta = -m$$



$y = mn^r - 1/rm + 2m - 1 \rightarrow \begin{matrix} a > 0 \\ m > 0 \end{matrix} \rightarrow n = \frac{-b}{ra} = \frac{1/r}{r/m} = \frac{y}{m}$

$y = mn^r - 1/rm + 2m - 1 \xrightarrow{\text{if } m=1} 2m - 1$

$\Delta m - 1 = mn^r - 1/rm + 2m - 1 \rightarrow 0 \rightarrow mn^r - 1/rm = 0$   
 $\Delta = b^2 - 4ac = 1/r^2$

$\begin{cases} \frac{-b + 1/r}{ra} = \frac{r/r}{r/m} = \frac{1/r}{m} \\ \frac{-b - 1/r}{ra} = 0 \end{cases}$

$0 = mn^r - 1/rm + 2m - 1$   
 $\Delta = b^2 - 4ac = 1/r^2 - r \cdot m^r - 2m = -r \cdot m^r - 2m + 1/r^2 < 0$   
 $-am^r - m + r/r < 0$   
 $\Delta = b^2 - 4ac = 1 + (-2)(-1)(r/r) = 1/r^2$

2

1,2



$$1 \times 10^2 - 1 \times 10^9 \times 10^2 + 1 \times 10^9$$

9

$$y = kn^2 - \varepsilon n - 4 \rightarrow G^1, \quad n = \frac{-b}{2a} = \frac{-(-\varepsilon)}{2k} = \frac{\varepsilon}{2k}$$

$$y = k \times \frac{\varepsilon^2}{4k^2} - \varepsilon \times \frac{\varepsilon}{2k} - 4 = \frac{\varepsilon^2}{4k} - \frac{\varepsilon^2}{2k} - 4 = \frac{\varepsilon^2}{4k} - \frac{2\varepsilon^2}{4k} - 4 = \frac{-\varepsilon^2 - 4k}{k}$$

$$y = -\varepsilon n - 4 \rightarrow \frac{-\varepsilon - 4k}{k} = \frac{-1}{k} - \frac{\varepsilon k}{k} \rightarrow -\varepsilon - 4k = -1 - \varepsilon k \rightarrow 2k = \varepsilon \rightarrow \boxed{k = \frac{\varepsilon}{2}}$$

$\varepsilon = k$  است  $\rightarrow \frac{-\varepsilon - 12}{2} = -1$

$$-m - n = -mn^2 + m(n+1)$$

$$\Rightarrow -mn^2 + (m+1)n + (1+m) = 0$$

$$\Delta < 0 \rightarrow b^2 - 4ac < 0 \rightarrow (m+1)(\varepsilon m+1) < 0$$

تقریباً

$-1 < m < -\frac{1}{\varepsilon}$  ناممکن  
دو برابر 0 می باشد تا به هم نرسد

بین دو زان تمام n های مختلف دهم ۲،۲ جواب متفاوت می باشد

۱. ۱، ۱، ۵

$$x_3 = \frac{3-a}{2} = -1 \rightarrow -\frac{b}{2a} = -1 \rightarrow -\frac{b}{a} = -2 = 5$$

طول راس سهوی میانی دو نقطه ای هم عرض است (شکل سهوی! مقبول نیست ...)

$$y_{\min} = (y-1) = a(n+1)^2 \rightarrow y = an^2 + 2an + a + 1$$

$$d^2 + \beta^2 = s^2 - 2p \rightarrow (-2)^2 - 2p = 4 \rightarrow p = -\frac{1}{2} \rightarrow \frac{a+1}{a} = -\frac{1}{2} \rightarrow 2a+2 = -a \rightarrow \boxed{a = -\frac{4}{3}}$$

$$\text{محض از سبیل} = a - 1 \rightarrow -\frac{4}{3} + 1 = -\frac{1}{3}$$

$$y_{\min} = \frac{-1}{4a} \rightarrow \frac{-(144 - 4m(m-1))}{4m} = 20m^2 - 4m - 144 = 4m$$

$$20m^2 - 4m - 144 = 0 \xrightarrow{\div 4} 5m^2 - m - 36 = 0 \xrightarrow{\text{دو برابر}} m^2 - 2m - 18 = 0$$

$$m = \frac{1 \pm \sqrt{1 + 72}}{2} = \frac{1 \pm \sqrt{73}}{2}$$

سهی min دار است پس m است!

$$m \geq 3 \rightarrow x_5 = -\frac{b}{2a} = \frac{12}{4} = 3$$

4

$$x^2 = t \rightarrow t^2 - vt - \Delta = 0 \rightarrow t = \frac{v \pm \sqrt{v^2 + 4\Delta}}{2} \xrightarrow{x^2} x^2 = \frac{v \pm \sqrt{v^2 + 4\Delta}}{2}$$

$$x = \pm \sqrt{\frac{v \pm \sqrt{v^2 + 4\Delta}}{2}} \leadsto s = 0, P = -\left(\frac{v \pm \sqrt{v^2 + 4\Delta}}{2}\right)$$

$$2P^2 - \underbrace{v^2}_{0}P + \underbrace{v^2}_{0} = 2P^2 = 2\left(\frac{v \pm \sqrt{v^2 + 4\Delta}}{2}\right)^2 = \frac{1}{2}(v^2 + 4\Delta + 1 \pm \sqrt{v^2 + 4\Delta}) = \Delta + v\sqrt{v^2 + 4\Delta}$$

$$-m x^2 + m x + 1 = -m - x \leadsto m x^2 - x(m+1) - (m+1) = 0 \quad \Delta < 0$$

$$(m+1)^2 + 4(m)(m+1) < 0 \leadsto \Delta m^2 + 4m + 1 < 0$$

بدون برخورد!

$$(m+1)(\Delta m + 1) < 0 \quad \frac{-1}{+} \quad \frac{-\Delta}{+} \quad \leadsto -1 < m < -\frac{1}{\Delta}$$

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