

$$\mu \alpha^2 = \frac{\kappa}{\mu} \rightarrow \alpha = \pm \frac{\sqrt{\kappa}}{\mu} \begin{cases} \alpha = \frac{\sqrt{\kappa}}{\mu} \rightarrow \beta = \sqrt{\kappa} \rightarrow a = 1 \\ \alpha = -\frac{\sqrt{\kappa}}{\mu} \rightarrow \beta = -\sqrt{\kappa} \rightarrow a = -1 \end{cases}$$

$$1 - (-1) = 14$$

عنه

19 نصف 14, 15 نصف

$$\mu \alpha^2 - a\alpha + \kappa = 0$$

$$\alpha, \beta = \mu \alpha \rightarrow \alpha \beta = \mu \alpha^2 = \frac{\kappa}{a} = \frac{\kappa}{\sqrt{\kappa}} \rightarrow \alpha^2 = \frac{\sqrt{\kappa}}{a} \rightarrow \alpha = \frac{\sqrt{\kappa}}{a}$$

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

$$\alpha = -\frac{\sqrt{\kappa}}{a} \rightarrow \beta = -\sqrt{\kappa} \rightarrow \alpha + \beta = a = -\sqrt{\kappa} - \frac{\sqrt{\kappa}}{a} = -\frac{1}{a}$$

$$\frac{1}{a} - (-\frac{1}{a}) = \frac{14}{\sqrt{\kappa}}$$

$$\mu \alpha^2 - (m + 1\kappa)\alpha + 1 = 0$$

$$\frac{1}{\sqrt{\alpha}} + \frac{1}{\sqrt{\beta}} = a \rightarrow \frac{\sqrt{\alpha} + \sqrt{\beta}}{\sqrt{\alpha\beta}} = a \rightarrow (\sqrt{\alpha} + \sqrt{\beta} = \frac{a}{4})$$

$$\alpha + \beta + 2\sqrt{\alpha\beta} = \frac{14}{4}$$

$$\alpha + \beta = \frac{-(-m - 1\kappa)}{\mu} = \frac{14}{4}$$

$$m + 1\kappa = 14 \rightarrow m = -11$$



$$\alpha\beta = \frac{c}{a} = \frac{r}{m} = \frac{r}{-1} = -r$$

در معادله $mx^2 + rx + c = 0$

$$rx^2 + rx - 9x - r = 0$$

(12)

α و β ریشه های معادله $rx^2 + rx - 9x - r = 0$ و $\alpha + \beta = 1$ و $\alpha\beta = -r$

$$\alpha + \beta = 1 \quad \alpha\beta = -r \quad \rightarrow \quad x^2 - 5x + r = 0 \quad \rightarrow \quad x^2 - x - r = 0$$

$$(x-1)(x+1) = 0 \quad \rightarrow \quad x = -1 \quad \rightarrow \quad x = 1$$

پس $\alpha = 1$ و $\beta = -1$ یا $\alpha = -1$ و $\beta = 1$ می‌باشد

$$x = 1 \rightarrow rx^2 + rx - 9x - r = 0$$

$$1r^2 + rk = 0 \rightarrow rk = -1r \rightarrow k = -1$$

$$x^2 + rx + a = 0 \rightarrow a = \alpha\beta$$

(13)

$$\alpha < \beta < 0$$

$$rx^2 + rx = 12\sqrt{r} + 1a \rightarrow x^2 + r(x^2 + \beta^2) = 12\sqrt{r} + 1a$$

$$x^2 + \beta^2 = 8r - rp = 49 - 4a \rightarrow \Delta = 49 - 4a$$

$$\Delta = 49 - 4a \rightarrow x = \frac{-r \pm \sqrt{r^2 - 4a}}{r} \rightarrow x^2 = \frac{r^2 - 4a \pm r\sqrt{r^2 - 4a}}{r^2}$$

$$x^2 = 11 - a + \sqrt{49 - 4a}$$

$$11 - a + \sqrt{49 - 4a} + \sqrt{r^2 - 4a} = 12\sqrt{r} + 1a$$

$$\sqrt{49 - 4a} + \sqrt{r^2 - 4a} = 12\sqrt{r} - 2a \rightarrow a = 11$$

$$x^2 - vx^2 - a = 0$$

(14)

$$x^2 = t \rightarrow t^2 - vt - a = 0 \rightarrow \Delta = 49 + 4a = 49 \rightarrow t_1 = \frac{v + \sqrt{49}}{2}$$

$$0 < x^2 < 0 \rightarrow t_1 < 0$$

$$t_r = \frac{V + \sqrt{49}}{r} \rightarrow x^r = \frac{V + \sqrt{49}}{r} \rightarrow \begin{aligned} \alpha_1 &= \sqrt{\frac{V + \sqrt{49}}{r}} \\ \alpha_2 &= -\sqrt{\frac{V + \sqrt{49}}{r}} \end{aligned}$$

$$r p^r - r s p + r s \rightarrow s = 0 \rightarrow r p^r = r \left(-\left(\frac{V + \sqrt{49}}{r} \right) \right)^r =$$

$$\Delta \boxed{\Delta + V \sqrt{49}} = r \left(\frac{11\Delta + 14\sqrt{49}}{r} \right)$$

$$r x^r - a x + b = 0 \quad \alpha, \beta \rightarrow \alpha\beta = \frac{b}{r}, \alpha + \beta = \frac{a}{r} \quad (4)$$

$$r a x^r + a x - 4 = 0 \quad (\alpha - \frac{1}{r}), (\beta - \frac{1}{r}) \rightarrow (\alpha - \frac{1}{r})(\beta - \frac{1}{r}) =$$

$$\alpha - \frac{1}{r} + \beta - \frac{1}{r} = \alpha + \beta - \frac{2}{r} = \frac{b}{r} - \frac{1}{r} \left(\frac{a}{r} \right) + \frac{1}{r} = \frac{-r}{a}$$

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

$$\frac{-1}{r} = \frac{a-r}{r} \rightarrow ra - r = -r \quad \boxed{a=1} \quad (5)$$

$$\frac{b}{r} = -r \quad b = -49$$

$$\left[\frac{ab}{r} \right] = \left[\frac{-49}{r} \right] = -r$$

$$a x^r - a x - b = 0 \rightarrow \alpha + \beta = 1 \quad \alpha\beta = \frac{-b}{a} \quad (6)$$

$$r_0 \beta^r + r_0 \alpha^r = r_0 \beta = 14$$

$$r \beta^r + \alpha^r - \beta = \frac{14}{r_0} \rightarrow (\alpha^r + \beta^r) + \beta^r - \beta = \frac{14}{r_0}$$

$$1 - r \left(\frac{-b}{a} \right) = \frac{a + rb}{a} \rightarrow \frac{a + rb}{a} = \frac{14}{r_0}$$

$$\rightarrow a \beta^r - a \beta = b \rightarrow \beta^r - \beta = \frac{b}{a}$$

$$\frac{a + rb}{a} = \frac{14}{r_0}$$

$$\frac{a+4b}{a} = \frac{14}{p_0} \rightarrow p_0 a + 4b = 14a \rightarrow 4a = -4b \rightarrow a = -b$$

$$\alpha + \beta = 1, \alpha\beta = \frac{1}{p_0} \rightarrow x^2 - x + \frac{1}{p_0} = 0 \quad \frac{-b}{a} = \frac{1}{p_0}$$

$$|\alpha - \beta| = \frac{\sqrt{\Delta}}{|a|} = \frac{1 - 4(\frac{1}{p_0})}{1} = \frac{\frac{p_0 - 4}{p_0}}{1} = \frac{p_0 - 4}{p_0}$$

$$x^2 - (a+1)x + a = 0 \rightarrow (x - \beta) = p \rightarrow \frac{\sqrt{\Delta}}{|a|} = p \tag{1}$$

$$\sqrt{(a+1)^2 - 4a} = p$$

$$a^2 - 2a + 1 = p^2$$

$$a^2 - 2a - p^2 = 0 \rightarrow (a - p)(a + 1) = 0$$

$$\begin{aligned} a &= p \\ a &= -1 \end{aligned}$$

$$a = p \rightarrow x^2 - px + p = 0 \rightarrow (x - 1)(x - p) = 0 \rightarrow \begin{aligned} x &= 1 \\ x &= p \end{aligned}$$

$$a = -1 \rightarrow x^2 - 1 = 0 \rightarrow \begin{aligned} x &= 1 \\ x &= -1 \end{aligned}$$

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(طبیعی)

$$a = p \rightarrow x^2 - (p+1)x + b = 0 \rightarrow x^2 - 10x + b = 0$$

$$\frac{\sqrt{\Delta}}{|a|} = p \rightarrow \sqrt{\Delta} = p \rightarrow \Delta = p^2 \rightarrow 100 - 4b = p^2$$

$$b = 24$$

$$x^2 - 10x + 24 = 0 \rightarrow (x - 4)(x - 6) = 0 \rightarrow \begin{aligned} x &= 4 \\ x &= 6 \end{aligned}$$

$$(4 \times 6) - (1 \times 3) = 24 - 3 = 21$$

$$x^2 + x - 1 - m^2 = 0 \quad x^2 + p^2 = 8^2 \quad p = 8 \tag{2}$$

$$1 - 2(-1 - m^2) = 5$$

③ $\leftarrow$ کمترین مقدار در صورتی است که m مربع است $\leftarrow 2m^2 + 4 \rightarrow \min \left| \frac{-b}{2a} \right| = 0 \rightarrow 0 \rightarrow 4$ ④

⑤ دو نقطه با عرض یکسان روی یک سهمی اند که طول آن ۱ است
 A(۳, y) B(-۲, y) $\rightarrow \frac{a+3}{1} = 1 \leftarrow$ عرض را از روی ۱

$$y = a(x - x_s)^2 + y_s \rightarrow y = a(x + 1)^2 + 1$$

$$y = ax^2 + 2ax + a + 1$$

$$\alpha^2 + \beta^2 = S^2 - 4P = (-2)^2 - 4\left(\frac{a+1}{a}\right) = 0$$

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

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

$$y = \frac{-1}{1}x^2 - \frac{1}{1}x + \frac{1}{1} \rightarrow x = 0 \rightarrow y = \frac{1}{1}$$

