

$$3u^2 - 5u + 4 = 0$$

$$\alpha = 3\beta, \alpha + \beta = \frac{5}{3}, \alpha\beta = \frac{4}{3}$$

$$3\beta + \beta = \frac{5}{3} \rightarrow 4\beta = \frac{5}{3} \rightarrow \alpha = 12\beta \rightarrow \boxed{\alpha = \pm 2} \rightarrow 12\left(\pm \frac{2}{3}\right) = \pm 8 \rightarrow 8 - (-8) = 16 \checkmark$$

$$3\beta(3\beta) = \frac{4}{3} \rightarrow 9\beta^2 = \frac{4}{3} \rightarrow \boxed{\beta = \pm \frac{2}{3}}$$

$$34u^2 - (u+14)u + 1 = 0$$

$$\frac{1}{\sqrt{\alpha}} + \frac{1}{\sqrt{\beta}} = 5 \Rightarrow \frac{\sqrt{\alpha} + \sqrt{\beta}}{\sqrt{\alpha\beta}} = \frac{\sqrt{\alpha+\beta+2\sqrt{\alpha\beta}}}{\sqrt{\alpha\beta}} = \frac{\sqrt{5+\frac{1}{5}}}{\frac{1}{5}} = 5 \rightarrow \sqrt{5+\frac{1}{5}} = \frac{5}{5} \rightarrow \boxed{2} \checkmark$$

$$(\sqrt{\alpha} + \sqrt{\beta})^2 = \alpha + \beta + 2\sqrt{\alpha\beta} \rightarrow p = \frac{1}{5} \rightarrow s = \frac{u+14}{25} = \frac{13}{25} \rightarrow \boxed{u = -1}$$

$$34u^2 + 3u + 1 = 0 \rightarrow p = \frac{3}{34} \xrightarrow{u=-1} \boxed{-2} \checkmark \Rightarrow 5 + \frac{1}{5} = \frac{26}{5} \rightarrow \boxed{s = \frac{13}{25}}$$

$$5u^2 + 4u^2 - 9u - 2 = 0 \Rightarrow u^2 - (\alpha+\beta)u + \alpha\beta = u^2 - u - 2$$

$$\alpha + \beta = 1$$

$$\alpha\beta = -2$$

$$\rightarrow (u^2 - u - 2)(pu + q) \rightarrow pu^2 - pu^2 + qu^2 - qu - 2pu - 2q$$

$$\rightarrow pu^2 + (q-p)u^2 + (-q-2p)u - 2q$$

$$-2q = -2 \rightarrow \boxed{q = 1}$$

$$-q - 2p = -9 \rightarrow 1 + 2p = 9$$

$$\boxed{p = 4}$$

$$\Rightarrow K = q - p \rightarrow 1 - 4 = \boxed{-3} \checkmark$$

بازدهم سیر

$$x^2 - 2x + a = 0 \Rightarrow \alpha + \beta = -(-2) = 2, \alpha\beta = a$$

$$\alpha < \beta < 0$$

$$\beta = -2 - \alpha$$

$$3\alpha^2 + 3\beta^2 = 12\sqrt{2} + 10 \rightarrow 3\alpha^2 + 3(-2-\alpha)^2 = 12\sqrt{2} + 10 \Rightarrow 3\alpha^2 + 3(4 + 4\alpha + \alpha^2) = 12\sqrt{2} + 10$$

$$\Rightarrow 3\alpha^2 + 12\alpha + 12 + 3\alpha^2 = 12\sqrt{2} + 10 \Rightarrow 6\alpha^2 + 12\alpha - 12 - 12\sqrt{2} = 0$$

$$\rightarrow \alpha = \frac{-12 \pm \sqrt{144 - 4 \times 6(-12 - 12\sqrt{2})}}{12}$$

$$\Rightarrow \alpha = \frac{-2 \pm \sqrt{144 + 24\sqrt{2}}}{6}, \beta = \frac{-4 \pm \sqrt{144 + 24\sqrt{2}}}{6}$$

$$\Rightarrow \alpha\beta = \alpha(-2-\alpha) = -2\alpha - \alpha^2 \rightarrow -\left(\frac{2 \pm \sqrt{144 + 24\sqrt{2}}}{6}\right)^2 + \frac{144 + 24\sqrt{2}}{6}$$

$$\Rightarrow \boxed{M=1} \checkmark$$

به راه شیب صفحه ضربات نوشتن

$$x^2 - 7x - 5 = 0 \rightarrow \text{ریشه} = \frac{7 \pm \sqrt{49 + 20}}{2}, \frac{7 \pm \sqrt{69}}{2}$$

$$S = 0$$

$$P = \frac{-7 + \sqrt{69}}{2}$$

$$\Rightarrow 2P^2 - 3SP + 15 = 2\left(\frac{-7 + \sqrt{69}}{2}\right)^2 - 3(0)\left(\frac{-7 + \sqrt{69}}{2}\right) + 15$$

$$\Rightarrow \boxed{59 + 7\sqrt{69}} \checkmark$$

$$2x^2 - 9x + b = 0$$

$$2ax^2 + ax - 6 = 0$$

$$\alpha + \beta = \alpha' + \beta' + 1 \rightarrow \frac{\alpha}{\gamma} = \frac{-\alpha}{2\alpha} + 1 = \frac{1}{\gamma} \rightarrow \alpha = 1 \rightarrow 2x^2 + x - 6 = 0$$

$$\rightarrow \alpha', \beta' = -2, \frac{3}{2} \rightarrow \alpha, \beta = -\frac{3}{2}, 2$$

$$\Rightarrow \frac{b}{\gamma} = \alpha\beta = -3 \rightarrow \boxed{b = -6} \rightarrow \left[\frac{\alpha\beta}{\gamma}\right] = \left[\frac{-6}{2}\right] = (-3) \checkmark$$

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مصر (نصی)

بازدمم سیر

$$\alpha u^r - \alpha u - b = 0 \longrightarrow \alpha + \beta = 1$$

$$r_0 \beta^r + r_0 \alpha^r - r_0 \beta = 1V \quad \alpha \beta = -\frac{b}{a} - \frac{b}{a} = \left(-\frac{1}{r_0}\right) \quad (V)$$

$$r_0 \beta^r + r_0 \alpha^r + r_0 \beta^r - r_0 \beta = 1V$$

$$r_0 [(\alpha + \beta)^r - r \alpha \beta] + r_0 (\beta^r - \beta) = 1V$$

$$r \left(1 + \frac{r b}{a}\right) + r_0 \frac{b}{a} = 1V$$

$$(\alpha - \beta)^r = (\alpha + \beta)^r - r \alpha \beta = 1 - \frac{1}{r} = \frac{r-1}{r} \longrightarrow \alpha - \beta = \frac{r-1}{r} \xrightarrow{\text{ریشه}} \left(\frac{r-1}{r}\right) \checkmark$$

$u_1, u_r =$ ریشه $n =$ عدد جمله

$$u^r - (\alpha + 1)u + \alpha = 0 \longrightarrow u_1 u_r = \alpha \longrightarrow u_1 = r n - 1, u_r = r n + 1 \quad (A)$$

$$u_1 + u_r = \alpha + 1 \quad u_1 u_r = \alpha + 1$$

$$u_1 u_r = \alpha + 1, u_1 u_r = \alpha + 1$$

$$u_1 + u_r = \alpha + 1 \rightarrow \alpha + 1 = \alpha + 1 \rightarrow \alpha = \alpha + 1$$

$$u_1 u_r = \alpha \rightarrow \alpha + 1 = \alpha \rightarrow \alpha = \alpha + 1$$

$$\Rightarrow \alpha + 1 = \alpha + 1, \alpha + 1 = \alpha + 1, \alpha + 1 = \alpha + 1$$

$$\alpha = \alpha + 1 = 3$$

$$\alpha = 1, u_r = 3$$

$$\Rightarrow 3 \times 1 = (3) \star$$

$$n = 0 \text{ و } 1$$

$$y_1, y_r =$$
 ریشه $m =$ عدد جمله

$$u^r - (r \alpha + 1)u + b = 0 \longrightarrow y_1 + y_r = \alpha + 1$$

$$y_1 = r m, y_r = r m + 1 \quad y_1 y_r = \alpha + 1$$

$$\Rightarrow y_1 + y_r = r \alpha + 1 = 3 \times 3 + 1 = 10 \longrightarrow \alpha + 1 = 10$$

$$\Rightarrow \alpha + 1 = 10 \longrightarrow \boxed{\alpha = 9} \longrightarrow y_1 y_r = \alpha + 1 = (9) \star$$

$$u^r + u - 1 = 0 \longrightarrow \alpha + \beta = -1, \alpha \beta = -(m+1)$$

$$\alpha^r + \beta^r \longrightarrow (\alpha + \beta)^r - r \alpha \beta \longrightarrow 5^r - r \beta = (-1)^r - r(-m-1) = 1 + r + r m^r = 3 + 1 m^r$$

$$r m^r = 3 + 1 m^r \longrightarrow \boxed{m = 0}$$

$$\alpha^r + \beta^r = 3 + 1(0) = (3) \checkmark$$

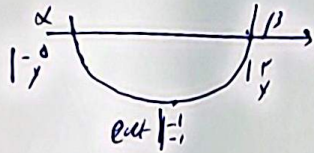
بازیم سر ۱۱

معین نصری

رأبیت کیا ۱۱

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$A(r, y)$



$$\frac{a+p}{r} = \frac{-0+r}{r} = 1$$

$$\alpha + \beta = -r \rightarrow -\frac{r}{r} = (-1)$$

$$\beta = (-0, y)$$

$$\alpha^r + \beta^r = 0 \rightarrow s^r - rp = 0 \rightarrow \alpha / \beta = -\frac{1}{r} \rightarrow y = a(u^r + r u - \frac{1}{r}) = 1 - a(1 - r - \frac{1}{r})$$

$$\rightarrow \boxed{a = -\frac{r}{r}} \checkmark \rightarrow y = -\frac{r}{r} (u^r + r u - \frac{1}{r}) = \boxed{y = \frac{1}{r}} \checkmark$$

$$S = -4 \quad p = a$$

$$\alpha, \beta = \frac{-4 \pm \sqrt{16 - 4a}}{r} \quad \alpha < \beta \rightarrow \alpha = -\frac{r}{r} - \sqrt{9 - a}$$

$$\alpha^r + r(\alpha^r + \beta^r) = \alpha^r + r(s^r - rp)$$

$$(-\frac{r}{r} - \sqrt{9 - a})^r + r(16 - 4a) = 12\sqrt{r} + 1a \rightarrow a = 1$$