

$$3u^2 - 0u + 1 = 0$$

(1)

$$\alpha = 3\beta, \alpha + \beta = \frac{a}{p}, \alpha\beta = \frac{c}{p}$$

$$3\beta + \beta = \frac{a}{p} \rightarrow 4\beta = \frac{a}{p} \rightarrow \alpha = 12\beta \rightarrow \boxed{a = \pm 12} \rightarrow 12\left(\pm \frac{1}{12}\right) = \pm 1 \rightarrow 1 - (-1) = \boxed{2}$$

$$3\beta(12\beta) = \frac{c}{p} \rightarrow 36\beta^2 = \frac{c}{p} \rightarrow \boxed{\beta = \pm \frac{1}{12}}$$

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

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

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$$(\sqrt{\alpha} + \sqrt{\beta})^2 = \alpha + \beta + 2\sqrt{\alpha\beta} \rightarrow p = \frac{1}{5}$$

$$s = \frac{u+14}{p} = \frac{13}{5} \rightarrow \boxed{u = -1}$$

$$34u^2 + 34u + 1 = 0 \rightarrow p = \frac{1}{u} \xrightarrow{u=-1} \boxed{-1}$$

$$\Rightarrow 5 + \frac{1}{p} = \frac{20}{p} \rightarrow \boxed{s = \frac{13}{5}}$$

$$5u^2 + 4u^2 - 9u - 2 = 0$$

$$\Rightarrow u^2 - (\alpha+\beta)u + \alpha\beta = u^2 - u - 2$$

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$$\alpha + \beta = 1$$

$$\alpha\beta = -2$$

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

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

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

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

$$\boxed{p = 4}$$

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

بازدهم سیر

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

$$\alpha < \beta < 0$$

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

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

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

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

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

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

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

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

$$S=0$$

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

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

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

$$20x^2 + 9x - 5 = 0$$

$$\alpha + \beta = \alpha' + \beta' + 1 \rightarrow \frac{\alpha}{2} = \frac{-\alpha'}{2} + 1 = \frac{1}{2} \rightarrow \alpha = 1 \rightarrow 2x^2 + x - 5 = 0$$

$$\rightarrow \alpha', \beta' = -2, \frac{5}{2} \rightarrow \alpha, \beta = -\frac{3}{2}, 2$$

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

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

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

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

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

$$(\alpha - \beta)^r = (\alpha + \beta)^r - r \alpha \beta = 1 - \frac{1}{r} = \frac{r-1}{r} \longrightarrow \alpha - \beta = \sqrt[r]{\frac{r-1}{r}} \xrightarrow{\text{در صورتی که } r=5} \left(\frac{4}{5}\right)$$

$u_1, u_r =$ رتبه $n =$ عدد جمله

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

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

$$u_1 u_r = r n, u_1 u_r = r n^r - 1$$

$$u_1 + u_r = \alpha + 1 \longrightarrow r n = \alpha + 1 \longrightarrow \alpha = r n - 1$$

$$u_1 u_r = \alpha \longrightarrow r n^r - 1 = \alpha \longrightarrow \alpha = r n^r - 1$$

$$\Rightarrow r n - 1 = r n^r - 1 \Rightarrow r n - r n^r = 0 \Rightarrow r n (n - 1) = 0$$

$$\alpha = r n - 1 = r$$

$$\alpha = 1, u_r = r$$

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

$$n = 0 \text{ و } n = 1$$

$y_1, y_r =$ رتبه $m =$ عدد جمله

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

$$y_1 = r m, y_r = r m + r \quad y_1 y_r = r m (m + 1)$$

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

$$\Rightarrow r m = 1 \longrightarrow m = \frac{1}{r} \longrightarrow y_1 y_r = r \times r \times \frac{1}{r} = (r) \star$$

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

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

$$r m^r = r m^r \longrightarrow m = 0$$

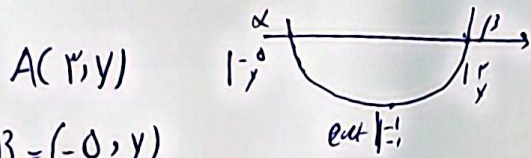
$$\alpha^r + \beta^r = r + 1 + (0) = (r) \star$$

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بازیم سر ۱۱

معین نصری

رالفین کیا ۱۱



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

$$a+p = -r \rightarrow -\frac{r}{r} = (-1)$$

$$B = (-0, y)$$

$$a\tilde{r} + \beta^r = 0 \rightarrow 5 - 2p = 0 \rightarrow a/\beta = -\frac{1}{r} \rightarrow y = a(u^r + ru - \frac{1}{r}) = 1 - a(1 - r - \frac{1}{r})$$

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