

$$a_5 = \frac{b}{2a} = \frac{-1}{2(5-1)} = 2 \Rightarrow 4a - 6 = -1 \Rightarrow a = \frac{5}{4} \Rightarrow -\frac{1}{4}n^2 + n + 2 = y$$

$$\Rightarrow -\frac{1}{4}n^2 + n + 2 = 0 \xrightarrow{\text{ضرب در ۴}} n^2 - 4n - 12 = 0 \Rightarrow (n-6)(n+2) = 0$$

سوال طولی ثبت راه است پس جواب است

جدول نشان دهنده دربرپایی بودن سهی است پس باید که از من باشد $m < 0$
از طوری عادلانه دارای ۲ ریشه باشد پس $c = 15 > 0$
 $25 - 6(m)(m) > 0$

$$\Rightarrow 6m^2 < 25 \Rightarrow |m| < \frac{5}{\sqrt{6}} \Rightarrow -\frac{5}{\sqrt{6}} < m < \frac{5}{\sqrt{6}} \quad II$$

$I \cap II \Rightarrow m \in (-\frac{5}{\sqrt{6}}, 0)$ حالین در شراستراک می گیریم

استاد بزرگ $n^2 - 5n + p = 0 \rightarrow$ رشتن عادلانه با استادان s, p

$$s = \frac{3-\sqrt{5}}{2} + \frac{3+\sqrt{5}}{2} = \frac{6}{2} = 3 \quad p = \frac{3-\sqrt{5}}{2} \times \frac{3+\sqrt{5}}{2} = \frac{9-(\sqrt{5})^2}{4} = \frac{4}{4} = 1$$

$$\Rightarrow p = \frac{4}{9} \Rightarrow n^2 - 3n + \frac{4}{9} = 0 \xrightarrow{\text{ضرب در ۹}} 9n^2 - 11n + 4 = 0$$

۹ صحیح اند پس

$$3\alpha^2 + \beta^2 = 12 \Rightarrow 3\alpha^2 + (\alpha^2 + 3\beta^2) = 12 \Rightarrow 4\alpha^2 - m - 2 + (5^2 - 2p) = 12$$

$$2\alpha^2 - 11\alpha + m + 2 = 0 \Rightarrow 2\alpha^2 = 11\alpha - m - 2 \Rightarrow -\frac{b}{a} = -\frac{-1}{2} = \frac{1}{2} = \frac{p}{s}$$

$$p = \frac{m+2}{2} \Rightarrow 12 = 4\alpha^2 - m - 2 + 12 - m - 2 = 12 \Rightarrow 4\alpha^2 = 2m \Rightarrow m = 2\alpha^2$$

$$\alpha = \frac{m}{2} \xrightarrow{\text{جایگزینی در معادله}} 2\left(\frac{m}{2}\right)^2 - 11\left(\frac{m}{2}\right) + m + 2 = 0 \Rightarrow m^2 - 11m + 14 = 0 \Rightarrow (m-4)(m-7) = 0$$

$$m = 4 \leftarrow$$

$$y = an^2 + bn + c \Rightarrow \frac{b}{2a} = a_5 = 2 \Rightarrow -4a = b \Rightarrow y = an^2 - 4an + 5$$

$$\text{معمولا راسی سهی} \Rightarrow a(2)^2 - 4a(2) + 5 = 9 \Rightarrow 4a - 8a + 5 = 9 \Rightarrow 4a = -4 \Rightarrow a = -1$$

$$\Rightarrow -n^2 + 4n + 5 = y \Rightarrow -n^2 + 4n + 5 > 0 \Rightarrow -(n+1)(n-5) > 0$$

$$\begin{array}{c} -1 \quad 5 \\ | \quad | \\ - \quad + \end{array}$$

در بازه $(-1, 5)$ بالای محور n است

$$S = \alpha + \beta = -\frac{b}{a} = \frac{V}{\alpha} \Rightarrow \alpha^2 + \alpha\beta = V \Rightarrow \begin{cases} \rightarrow -r \Rightarrow 9 - 2\beta = V \\ \rightarrow +r \Rightarrow 9 + 2\beta = V \end{cases} \checkmark$$

$$P = \alpha\beta = \frac{c}{a} = \frac{9\beta}{\alpha} \Rightarrow \alpha^2\beta = 9\beta \Rightarrow \alpha^2 = 9 \Rightarrow \alpha = \pm 3$$

$$\Rightarrow \beta = \frac{V}{\alpha}, \alpha = -r \Rightarrow \frac{1}{\alpha} + \frac{1}{\beta} = \frac{1}{-r} + \frac{1}{\frac{V}{-r}} = \frac{V}{r} - \frac{1}{r} = \frac{V}{S}$$

$$\alpha^2 - m\beta = 1 \Rightarrow \beta \text{ غير معلوم} \Rightarrow \beta^2 + m\beta - 2m = 0 \Rightarrow -m\beta = \beta^2 - 2m$$

$$\Rightarrow \underbrace{\alpha^2 + \beta^2 - 2m}_{S^2 - 4P} = 1 \Rightarrow \begin{cases} S = -m \\ P = -2m \end{cases} \Rightarrow \begin{cases} (-m)^2 - 2(-2m) - 2m = 1 \\ m^2 + 2m - 1 = 0 \end{cases} \Rightarrow (m+2)(m-1) = 0$$

$$\Delta > 0 \Rightarrow \begin{cases} m = -2 \\ m = 1 \end{cases} \Rightarrow \begin{cases} \alpha^2 - 2\alpha + 1 = 0 \Rightarrow \alpha = 1 \\ \alpha^2 + 2\alpha - 2 = 0 \Rightarrow \alpha = -1 \end{cases}$$

$$y_s = 1 = \frac{-\Delta}{f_0} \Rightarrow \frac{-(15 - 5x(\frac{m}{r} + V)(m))}{5m} = 1 \Rightarrow \frac{2m^2 + 21m - 15}{5m} = 1 \Rightarrow 2m^2 - 5m - 15 = 0$$

$$\Rightarrow m = -\frac{5}{2} \checkmark \rightarrow \text{غير قابل قبول}$$

$$\Rightarrow -2\alpha^2 + 5\alpha + 5 = 0 \Rightarrow (\alpha+1)(\alpha-5) = 0 \Rightarrow \alpha = -1, 5$$

$$\frac{k=2}{3} \text{ غير قابل قبول}$$

$$y = \alpha(\alpha-2)^2 + 5 \xrightarrow{\text{مشتق}} f = 3\alpha(\alpha-2) + 5 \Rightarrow \alpha = -\frac{1}{3}$$

$$\Rightarrow -\frac{1}{3}(\alpha-2)^2 + 5 = 0 \Rightarrow -\frac{1}{3}\alpha^2 + 2\alpha + \frac{16}{3} = 0 \Rightarrow \frac{1}{\alpha} + \frac{1}{\beta} = \frac{\alpha + \beta}{\alpha\beta}$$

$$\Rightarrow S = \frac{-r}{-\frac{1}{r}} = \beta \Rightarrow \frac{\beta}{-1} = -\frac{1}{r}$$

$$P = \frac{\beta}{-\frac{1}{r}} = -1 \Rightarrow \frac{\beta}{-1} = -\frac{1}{r}$$

$$\text{مشتق} \Rightarrow \alpha^2 - 2(\alpha+5) + (5\alpha^2 + 5\alpha + 5) = 0$$

$$\Rightarrow 6\alpha^2 - 2\alpha - 5 = 0 \Rightarrow \alpha = 1, -\frac{1}{6}$$

$$\alpha = 1 \Rightarrow \alpha^2 - 1\alpha + 12 \Rightarrow (\alpha-2)(\alpha-6) \rightarrow \alpha = 6$$

$$\alpha = -\frac{1}{6} \Rightarrow \alpha^2 - \frac{1}{6}\alpha + \frac{5}{6} \Rightarrow 6\alpha^2 - \alpha + 5 \Rightarrow (\alpha-\frac{1}{6})(6\alpha+30) = 0 \Rightarrow \alpha = -5$$