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$$\alpha = \frac{1}{\beta} \quad 2x^2 - 2x + 1 = 0 \quad \alpha + \beta = \frac{c}{a} \Rightarrow \beta + \beta = \frac{1}{\beta} \Rightarrow 2\beta^2 = \frac{1}{\beta} \Rightarrow \beta^3 = \frac{1}{2} \Rightarrow \beta = \sqrt[3]{\frac{1}{2}} \quad \alpha = \sqrt[3]{2}$$

$$\alpha + \beta = \frac{1}{\beta} \Rightarrow \beta^2 = \frac{1}{\alpha} \Rightarrow \beta^2 = \alpha \Rightarrow \beta(\frac{\beta}{\alpha}) = \alpha$$

$$\frac{\alpha=1}{\beta^2 = \alpha} \Rightarrow \alpha = -1 \quad \Rightarrow a_1 - a_2 = 1 - (-1) = 2 \quad \frac{1}{\beta^2} = \alpha \Rightarrow \alpha = -1 \quad a_2 - a_1 = -1 - 1 = -2$$

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$$2x^2 - (m+1)x + 1 = 0 \quad \frac{1}{\alpha} + \frac{1}{\beta} = \Delta \rightarrow \frac{\sqrt{\beta} + \sqrt{\alpha}}{\sqrt{\alpha}\sqrt{\beta}} = \Delta \Rightarrow \frac{\sqrt{\beta} + \sqrt{\alpha}}{\frac{1}{\sqrt{\alpha}}} = \Delta \Rightarrow \sqrt{\beta} + \sqrt{\alpha} = \frac{\Delta}{\sqrt{\alpha}}$$

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

$$\Delta + \beta = \frac{b}{a} = \frac{m+1}{m+1} = 1 \quad \Delta = \frac{1}{\sqrt{\alpha}} \Rightarrow \frac{1}{\sqrt{\alpha}} + \beta = 1 \Rightarrow \beta = 1 - \frac{1}{\sqrt{\alpha}}$$

$$m = -1 \rightarrow -2x^2 + 2x + 1 = 0 \rightarrow \rho = \frac{c}{a} = \frac{1}{-2} = -\frac{1}{2}$$

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$$\alpha + \beta = 1 \quad 2x^2 + kx + 9 = 0 \quad (\alpha + \beta)^2 = \alpha^2 + \beta^2 + 2\alpha\beta = 1 \Rightarrow \alpha^2 + \beta^2 = 1 - 2\alpha\beta = 1 - 2 \Rightarrow \alpha^2 + \beta^2 = -1$$

$$(\alpha - \beta)^2 = \alpha^2 + \beta^2 - 2\alpha\beta = -1 + 2 = 1 \Rightarrow \alpha - \beta = \pm 1 \Rightarrow \alpha = 1, \beta = 0 \text{ or } \alpha = 0, \beta = 1$$

$$-2 + k + 9 = 0 \Rightarrow k = -7$$

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$$2x^2 + 11x + a = 0 \quad \gamma(\alpha^2 + \beta^2) + \alpha^2 = 11\sqrt{2} + 10 \Rightarrow \gamma(11 - 2\sqrt{2} + 11 - 2\sqrt{2}) + 11 - 2\sqrt{2} = 11\sqrt{2} + 10$$

$$\Delta = 11 - 2\sqrt{2} \Rightarrow \alpha, \beta = \frac{-11 \pm \sqrt{11 - 2\sqrt{2}}}{2} \Rightarrow \beta = \frac{-11 + \sqrt{11 - 2\sqrt{2}}}{2}$$

$$\beta^2 = 9 + 9 - 2\sqrt{9 - a} \Rightarrow \alpha^2 = 9 + 9 - 2\sqrt{9 - a}$$

$$11\sqrt{2} - 10 = -2\sqrt{9 - a} \Rightarrow -2\sqrt{9 - a} = 11\sqrt{2} - 10 \Rightarrow \sqrt{9 - a} = \frac{10 - 11\sqrt{2}}{2}$$

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$$2x^2 - 2x + 1 = 0 \rightarrow t^2 - 2t - 1 = 0 \quad (9 - 1)(-1) = 10 \Rightarrow t = \frac{2 \pm \sqrt{4 + 40}}{2} = 1 \pm \sqrt{11}$$

$$t = 2x \rightarrow x = \frac{1 \pm \sqrt{11}}{2} \Rightarrow x = \frac{1 + \sqrt{11}}{2} \Rightarrow x = \pm \sqrt{\frac{1 + \sqrt{11}}{2}}$$

$$x_1 + x_2 = 0 \quad x_1 \cdot x_2 = 1 \Rightarrow \sqrt{\frac{1 + \sqrt{11}}{2}} \cdot \sqrt{\frac{1 - \sqrt{11}}{2}} = 1 \Rightarrow \sqrt{\frac{1 - 11}{2}} = 1 \Rightarrow \sqrt{-5} = 1 \Rightarrow -5 = 1 \Rightarrow \text{no solution}$$

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$$2x^2 - 2x + b = 0 \quad \alpha + \beta = \frac{a}{b} \quad \alpha\beta = \frac{c}{b}$$

$$2x^2 + 2x - 9 = 0 \quad \alpha' + \beta' = -\frac{1}{2} \quad \alpha'\beta' = -\frac{9}{2}$$

$$\left[\frac{\alpha\beta}{\frac{c}{b}}\right] = \left[\frac{1 \times (-1)}{-9}\right] = -\frac{1}{9}$$

$$(\alpha - 1)(\beta - 1) = \alpha\beta - \alpha - \beta + 1 = -\frac{9}{2} - \frac{1}{2} + 1 = -5$$

$$\frac{b}{c} = -5 \Rightarrow b = -5c$$

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$$a\alpha^r - a\alpha - b = 0 \quad \alpha + \beta = 1 \rightarrow \alpha = 1 - \beta$$

$$r\beta^r + \frac{r(1-\beta)^r}{r - r\beta + r\beta^r} - r\beta = 1 \rightarrow r\beta^r - r\beta + 1 = 0$$

$$r\beta^r - r\beta + 1 = 0 \rightarrow \beta = \frac{r \pm \sqrt{r^2 - 4}}{2} = \frac{1 \pm \sqrt{1-4}}{2} \Rightarrow \alpha = 1 - \beta \Rightarrow \alpha = 1 - \frac{1 \pm \sqrt{1-4}}{2} =$$

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

$$\alpha = \frac{1 \pm \sqrt{1-4}}{2}$$

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$$x^r - (a+1)x + a = 0 \rightarrow \text{dividing by } x \rightarrow a + bxc = 0 \Rightarrow x = 1, a = 1, r \Rightarrow \alpha = r$$

$$x^r - (rm+1)x + b = 0 \rightarrow \text{dividing by } x \rightarrow a = r, x^r - 1 \cdot x + b = 0 \rightarrow s = 1, p = b, \alpha = \beta + r$$

$$\alpha + \beta = 1 \rightarrow \beta = r, \alpha = r$$

$$r(r-r) = r^2 - r = r(r-1) \Rightarrow r(r-1) = r(r-1) = r(r-1)$$

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$$x^r + x + (-m^r - 1) = 0 \quad \alpha \times \beta = -m^r - 1, \quad \alpha + \beta = -1 \Rightarrow \mu\mu = sr - rp = 1 - rp$$

$$\left. \begin{aligned} 1 + rm^r + r &= rm^r + r \\ m &= \end{aligned} \right\} \Rightarrow r = \text{مميز}$$

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$$x_5 = \frac{r-a}{r} = -1, \quad y_5 = 1 \Rightarrow y = a(x+1)^{r+1} = a(x^r + rx + a + 1)$$

$$A \begin{pmatrix} r \\ y \end{pmatrix} \quad B \begin{pmatrix} -a \\ y \end{pmatrix}$$

$$\alpha^r + \beta^r = a \Rightarrow \left(\frac{-r}{a}\right)^r - r\left(\frac{a+1}{a}\right) = 0 \Rightarrow \frac{-r^r - r}{a} = 1 \Rightarrow -r^r - r = a$$

$$y = -\frac{r}{a}x^r - \frac{r}{a}x + \left(\frac{-r}{a} + 1\right) \xrightarrow{\text{...}} y = \frac{1}{r}$$

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