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مقطع: بازدهی و سود
A

$$3x^2 - ax + \varepsilon = 0 \quad K \Rightarrow \frac{x}{3} \rightarrow 3x \frac{\varepsilon}{a} - \frac{x}{3} a + \varepsilon = 0 \xrightarrow{1} \varepsilon - 2a + 12 = 0 \quad (1) \quad a = 1$$

$$K, K_B \xrightarrow{x} 3x^2 = \frac{\varepsilon}{3} \rightarrow B = \frac{1}{3} \quad K \Rightarrow -\frac{x}{3} \rightarrow 3x \frac{\varepsilon}{a} + \frac{x}{3} a + \varepsilon \xrightarrow{1} a = -1$$

5) از دو معادله: 12

$$3x^2 - (m+12)x + 1 = 0 \quad \alpha\beta = \frac{1}{3} \quad \alpha + \beta = \frac{m+12}{3}$$

$$\frac{1}{\sqrt{\alpha}} + \frac{1}{\sqrt{\beta}} = 0 \rightarrow \frac{\sqrt{\beta} + \sqrt{\alpha}}{\sqrt{\alpha\beta} \frac{1}{3}} = 0 \rightarrow (\sqrt{\beta} + \sqrt{\alpha})^2 = \alpha + \beta + 2\sqrt{\alpha\beta}$$

$$m \cdot 3 + 3m + 12 = -1 \rightarrow m = -1 \quad \frac{1}{3} = \frac{m+12}{3} \rightarrow m = -1$$

$$3x^2 + kx^2 - ax - r = 0 \quad \alpha + \beta = 1 \quad \alpha\beta = -r$$

$$x = -1 \rightarrow (3(-1) + k(-1) - a(-1) - r = 0 \rightarrow -3 - k + a - r = 0 \rightarrow -k = -14 \rightarrow k = 14$$

$$3x^2 + 4x + a = 0 \quad \alpha < \beta < 0 \quad 3\alpha^2 + 4\beta^2 = 12\sqrt{r} + 1 \quad a = 5$$

$$3\alpha^2 + 4\beta^2 = 12\sqrt{r} + 1 \quad \frac{3}{4}(\alpha^2 + \beta^2) + \frac{1}{4}(\alpha^2 - \beta^2) = 12\sqrt{r} + 1 \quad \frac{3}{4}(1 - 2\alpha\beta) + \frac{1}{4}((-4)(-2\sqrt{4-a})) = 12\sqrt{r} + 1$$

$$3x^2 - vx^2 - a = 0 \quad x^2 = z \quad S = 0$$

$$z^2 - vz - a = 0 \rightarrow \Delta = 4a \rightarrow z = \frac{v \pm \sqrt{4a}}{2} \rightarrow x^2 = \frac{v \pm \sqrt{4a}}{2} \rightarrow x = \pm \sqrt{\frac{v \pm \sqrt{4a}}{2}}$$

$$\begin{aligned} \gamma u^r - au + b &= 0 \quad (\alpha + \frac{1}{r}), (\beta + \frac{1}{r}) \rightarrow \alpha\beta + \frac{1}{r}(\alpha + \beta) + \frac{1}{r} = \frac{b}{r} \Rightarrow -\frac{1}{r} + \frac{1}{r} + \frac{1}{r} = \frac{b}{r} \Rightarrow b = -1 \\ \gamma a u^r + au - \gamma &= 0 \quad \alpha, \beta \rightarrow \alpha\beta = \frac{-\gamma}{-1} \quad \alpha + \beta = \frac{-1}{r} \rightarrow \boxed{a=1} \quad \boxed{b=-1} \\ &\quad \left[\frac{a \ b}{\gamma} \right] = \frac{-1}{r} \end{aligned}$$

$$\begin{aligned} a(u^r - u) - b &= 0 \\ \alpha u^r - au - b &= 0 \\ \alpha\beta &= \frac{-b}{a} \quad \alpha + \beta = 1 \\ (\alpha + \beta)^r &= \alpha^r + \beta^r + r\alpha\beta \\ 1 &= \alpha^r + \beta^r - \frac{r \cdot 1}{a} \\ | \beta - \alpha | &= \sqrt{(\alpha + \beta)^r - r\alpha\beta} = \frac{r}{\sqrt{a}} \end{aligned}$$

$$\begin{aligned} u^r - (a+1)u + a &= 0 \quad \xrightarrow{\text{عز فريب}} 1, 2, \alpha \xrightarrow{\text{عز}} \Sigma \\ u^r - \varepsilon u + \gamma &= 0 \\ u^r - (r\alpha + 1)u + b &= 0 \\ u^r - 10u + b &= 0 \Rightarrow \text{عز} = 10 \rightarrow \Sigma \rightarrow b = r\Sigma \\ &\quad \rightarrow \gamma \rightarrow b = \underline{r\Sigma} \end{aligned}$$

$$\begin{aligned} u^r + u - 1 - m^r &= 0 \quad \alpha^r + \beta^r = r \\ \alpha\beta &= -1 - m^r \\ \alpha + \beta &= -1 \rightarrow (\alpha + \beta)^r = \alpha^r + \beta^r + r\alpha\beta \\ 1 &= \alpha^r + \beta^r - r - r m^r \rightarrow \alpha^r + \beta^r = r + r m^r \rightarrow m = 0, r^r \end{aligned}$$

$$\begin{aligned} \gamma_s = \frac{uA + uB}{r} &= -1 \quad y = 1 \quad y = a(u+1)^r + 1 \rightarrow au^r + \gamma au + (a+1) = 0 \\ \alpha^r + \beta^r &= (\alpha + \beta)^r - r\alpha\beta = a = \varepsilon - r \left(\frac{a+1}{a} \right) \rightarrow a = \frac{-r}{r} \\ y &= \frac{-r}{r} (u+1)^r + 1 \xrightarrow{\text{بجای } u} y = \frac{-r}{r} + 1 = \frac{1}{r} \end{aligned}$$