

$$\frac{\Delta}{fa} \sim yman$$

$$\frac{-(b^2 + 12)}{-f} = v$$

$$b^2 + 12 = 21$$

$$b^2 = 9 \sim \rightarrow \boxed{b = \pm 3}$$

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$$t^2 - 2t + 3 = 0 \quad (m^2 = t)$$

$$\Delta < 0$$

پس اینها را دارد

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$$t^2 - 2t - 15 = 0 \quad (f = m^2 = t)$$

$$(t-5)(t+3)$$

$$f - m^2 = -3$$

$$m^2 = 3 \rightarrow \boxed{m = \pm \sqrt{3}}$$

$$f - m^2 = 5$$

$$m^2 = -1$$

غیرممکن

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$$fm^2 - 12m + m$$

$$m^2 - fm + \frac{m}{f}$$

$$S = f$$

$$\frac{m}{f} = 1 \times 3 \sim \rightarrow \boxed{\begin{matrix} m = 12 \\ \alpha = 1 \\ \beta = 3 \end{matrix}}$$

$$\alpha + (\alpha + 2) = f$$

$$\alpha = 1 \quad \beta = \alpha + 2 = 3$$

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$$3m^2 - 4m + m - 1$$

$$2m^2 - 3m + \frac{m-1}{3}$$

$$\alpha + \beta = 2$$

$$2\alpha + 2\beta = f$$

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

$$\beta = 0$$

if $\beta = 0 \sim \rightarrow p = 0$

$$m - 1 = 0$$

$$\boxed{m = 1}$$

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$$-mm^2 + fm + m^2 - 2 = 0$$

$$m^2 + \frac{-f}{m}m + \frac{-m^2 + 2}{m} = 0$$

$$\frac{-m^2 + 2}{m} = 1$$

$$m^2 + m - 2 = 0$$

$$m = -2, 1$$

$$\rightarrow \boxed{m = 1}$$

غیرممکن $\rightarrow$ if $m = -2 \sim \rightarrow \Delta = 0 \quad 3m^2 + fm + 2 = 0$

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$q^T - m \alpha + \gamma = 0$ $\alpha B^T = \gamma$ $\alpha B^T \beta = \gamma$ $\beta = \frac{\gamma}{\gamma}$ $\alpha = \frac{\gamma}{\gamma}$	$\frac{\gamma}{\gamma} + \frac{\gamma}{\gamma} = \frac{1 \gamma + 1 \gamma}{1 \gamma} = \frac{\gamma \gamma}{1 \gamma}$	6
$q^T - m \alpha + m = 0$ $\alpha + \beta = \gamma$ $\alpha + \gamma \alpha = \gamma$ $\alpha = 1$ $\alpha + \gamma \alpha = \gamma \alpha^T = \gamma (1)^T = \gamma$ $m = \gamma$		7
$q^T - \gamma m + \gamma = 0$ $p = \gamma$ $\alpha B = \gamma$ $B = \frac{\gamma}{\alpha} \Rightarrow B^T = \frac{1}{\alpha^T}$ $\alpha^T + \frac{1}{\alpha^T} = \alpha^T + B^T = \gamma^T - \gamma p \gamma^T - \gamma (V \times \gamma) = \gamma \gamma^T - \gamma^T = \gamma \cdot 1$		8
$m \alpha - \gamma m \Rightarrow \frac{-\Delta}{\gamma \alpha} = \frac{-d \cdot \gamma}{-\gamma \cdot \gamma} = \gamma \gamma / d$ $-1 \cdot t + d \cdot t = 0$ $-1 \cdot t (t + d) = 0$ $t = d$ $t = 0$ $L \rightarrow \overline{OQ}$		9
(الف) (ب) نقطه برخورد $m > 0$ نقطه برخورد $m < -1$		10