

$$\begin{aligned}
 &4a^2 - 3b^2 - 7b + 9a + 1 \\
 &3(a^2 - b^2) + 7(a - b) + a^2 + 7a + 1 = 0 \quad \left| \quad 4(a^2 - b^2) + 9(a - b) + 2b^2 + 2b + 1 = 0 \right. \\
 &(a - b)(3a + 3b + 7) + (a + 1)^2 = 0 \quad \left| \quad (a - b)(4a + 4b + 9) + (b + 1)^2 = 0 \right. \\
 &3a + 3b + 7 = \frac{(a + 1)^2}{b - a} \quad \left| \quad 4a + 4b + 9 = \frac{(b + 1)^2}{b - a} \right.
 \end{aligned}$$

$$\Rightarrow (3a + 3b + 7)(b + 1)^2 = (4a + 4b + 9)(a + 1)^2$$

$$\begin{aligned}
 &\Rightarrow \frac{(a + 1)^2}{(b - a)} \cdot \frac{1}{(b + 1)^2} = \frac{(b + 1)^2}{(b - a)} \cdot \frac{1}{(a + 1)^2} \\
 &\quad \quad \quad (b - a) \mid (a + 1)^2 \quad \quad \quad (b - a) \mid (b + 1)^2
 \end{aligned}$$

$$\begin{aligned}
 &\Rightarrow (b + 1)^2 = K(b - a) \\
 &\quad \quad \quad = K_1
 \end{aligned}$$

$$\begin{aligned}
 &2a^2(2a + 1)^2 = 4a^2 + 4a + 1 \\
 &- 3b^2 - 7b + 5a = 0 \\
 &\quad \quad \quad - 5b - 3b + 5a - 1 = 0 \\
 &(2b + 1)^2 = 4b^2 + 4b + 1
 \end{aligned}$$

$$\begin{aligned}
 &(2a + 1)^2 - (2b + 1)^2 + b^2 - 3b - 5a - 1 = 0 \\
 &\quad \quad \quad - b(2 + b)
 \end{aligned}$$

$$\begin{aligned}
 &2a(a + 2) - 3b(b + 2) \\
 &\quad \quad \quad - a^2 - a - b + 1 \\
 &\quad \quad \quad - a(a + 1) - (b - 1)
 \end{aligned}$$

$$\begin{aligned}
 &12(a^2 - b^2) + 403(b - b) \quad - 6a^2 + 9b^2 \\
 &\quad \quad \quad - 54a + 56b \\
 &\quad \quad \quad + 1
 \end{aligned}$$