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$$x^2 - (x+1)x + 2 = 0 \quad \mu \geq x+2 > 0 .$$

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$$x_1^2 + x_2^2 + x_1 x_2 (2 + x_1 x_2) \leq 4(x+2) .$$

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) ,  $\frac{1}{x+1} (x+2)x^2 - (x+1)x + 1 = 0 .$

) = x+2

)  $x+1 = -2x + \dots$

$$\begin{aligned} & ) \quad \Delta = 2^2 - 4 \cdot 1 \cdot 1 = 4 - 4 = 0 \\ & \quad = (1)^2 - 4(1) = 1 - 4 = -3 < 0 \\ & \quad > 1 \Rightarrow (1)^2 > 0 \geq 1 + 2 \Leftrightarrow 1 - 2 \geq 0, \end{aligned}$$

$$\begin{aligned} & ) \quad S = x_1 + x_2 = 0 \Leftrightarrow \frac{+1}{1} = 0 \Leftrightarrow = -1 \\ & \quad x^2 + 1 = 0 \Leftrightarrow x^2 = -1 < 0 \end{aligned}$$

$$\begin{aligned} & ) \quad P = x_1 x_2 = 1 \Leftrightarrow \frac{+2}{1} = 1 \Leftrightarrow = -1 \\ & \quad x^2 - (1)x + 1 = 0, \quad \Delta = (1)^2 - 4 = 1 - 4 = -3 \\ & \quad \therefore x_{1,2} = \frac{1 \pm \sqrt{1 - 4}}{2} \end{aligned}$$

$$\begin{aligned} & ) \quad x_1^2 + x_2^2 + x_1 x_2 (2 + x_1 x_2) \leq 4(1 + 2) \Leftrightarrow x_1^2 + x_2^2 + 2x_1 x_2 + x_1^2 x_2^2 \leq 4(1 + 2) \Leftrightarrow \\ & \quad (x_1 + x_2)^2 + (x_1 x_2)^2 \leq 4 + 8 \Leftrightarrow (1)^2 + (2)^2 - 4 - 8 \leq 0 \Leftrightarrow \\ & \quad 1 + 4 + 4 - 4 - 8 \leq 0 \Leftrightarrow 1 + 4 - 4 \leq 0 \Leftrightarrow \\ & \quad (1)^2 + (2)^2 \leq 0 \quad (1) \\ & \quad (1)^2 \geq 0 \quad (2)^2 \geq 0, \quad (1) \quad \mu \\ & \quad ((1)^2 = 0 \Leftrightarrow 1 = 0 \Leftrightarrow = 1) \quad ((2)^2 = 0 \Leftrightarrow 2 = 0 \Leftrightarrow = 2) \end{aligned}$$

$$\begin{aligned} & ) \quad x^2 - (1)x + 1 = 0, \quad \Delta = 1 - 4 = -3 \\ & \quad \frac{1}{2} \quad (1)x^2 - (1)x + 1 = 0, \quad \mu \end{aligned}$$

$$\begin{aligned} & (1) \left(\frac{1}{2}\right)^2 - (1)\frac{1}{2} + 1 = 0 \Leftrightarrow \frac{+2}{2} - \frac{+1}{2} + 1 = 0 \Leftrightarrow \frac{+2}{2} - \frac{+1}{2} + 1 = 0 \Leftrightarrow \\ & \quad +2 - (1) + 1 = 0 \end{aligned}$$

$$\begin{aligned} & ) \quad = +2 \quad x^2 - (1)x + 1 = 0 \\ & \quad = (1)^2 - 4 = 1 - 4 = -3 < 0 \\ & \quad \therefore x_{1,2} = \frac{1 \pm \sqrt{1 - 4}}{2} \Leftrightarrow x_1 = \frac{1 + \sqrt{-3}}{2}, \quad x_2 = \frac{1 - \sqrt{-3}}{2} = 1 \end{aligned}$$

$$\begin{aligned} & ) \quad x + 1 = -2x + 1 \Leftrightarrow x + 2x = 1 - 1 \Leftrightarrow (2)x = 0 \\ & \quad +2 > 0 \Leftrightarrow > -2 \quad x = \frac{-1}{+2} \end{aligned}$$