

2 μ

$$\mu \quad \mu, \quad \mu \quad \alpha = |\beta - 1|.$$

$$) \quad , \quad |\alpha - \beta + 1| = \alpha.$$

$$) \quad , \quad x^2 - \beta x - \alpha = 0 \quad .$$

$$) \quad , \quad \sqrt{\beta^2 - 2\beta + 1} + 2\beta = \beta^2 + 1.$$

$$) \quad , \quad (x +)^2 - (x -)^2 = 2 (+)$$

$$\mu \quad \mu, \quad x^2 + x + = 0, \quad \cdot \neq 0, \quad \frac{1}{}$$

$$) \quad , \quad x^2 + x + = 0.$$

$$) \quad , \quad (-1)^2 + 4 - 5 = 0.$$

$$) \quad \beta \neq 1 \quad :$$

$$\text{i. } \alpha + \frac{9}{\alpha} \geq 6$$

$$\text{ii. } (\alpha^2 + 9)(\beta^4 + 9) \geq 36\alpha\beta^2$$

$$) \quad \mu \quad \mu \quad | -1| \geq -1 \Leftrightarrow - + 1 \geq 0, \quad :$$

$$|\alpha - \beta + 1| = \alpha \Leftrightarrow \alpha - \beta + 1 = \alpha \Leftrightarrow -\beta + 1 = 0 \Leftrightarrow \beta = 1 \text{ και } \alpha = 0$$

$$) \quad 2 \quad \mu \quad \mu \quad = 2 + 4 = 2 + 4 | -1| > 0$$

$$) \quad \sqrt{\beta^2 - 2\beta + 1} + 2\beta = \beta^2 + 1 \Leftrightarrow \sqrt{(\beta - 1)^2} = \beta^2 - 2\beta + 1 \Leftrightarrow |\beta - 1| = (\beta - 1)^2 \Leftrightarrow \alpha = \alpha^2 \Leftrightarrow \alpha - \alpha^2 = 0 \Leftrightarrow$$

$$\alpha(1 - \alpha) = 0 \Leftrightarrow \alpha = 0 \quad \alpha = 1$$

$$= 0 \quad | -1| = 0 \Leftrightarrow = 1 \quad = 1$$

$$| -1| = 1 \Leftrightarrow (-1 = 1 \Leftrightarrow = 2) \quad (-1 = -1 \Leftrightarrow = 0)$$

$$) \quad (x +)^2 - (x -)^2 = 2 (+) \Leftrightarrow x^2 + 2x + 2 - x^2 + 2x - 2 = 2 + 2 \Leftrightarrow$$

$$2(+)x = 2 + 2 + 2 \Leftrightarrow 2(+)x = (+)^2 \quad (1)$$

$$2(+) \neq 0 \Leftrightarrow + \neq 0 \Leftrightarrow \neq - \quad (1) \quad : x = \frac{(+)^2}{2(+)} = \frac{+}{2},$$

$$2(+) = 0 \Leftrightarrow + = 0 \Leftrightarrow = - \quad (1) \quad : 0 \cdot x = 0 \quad \mu$$

$$\mu \quad \mu, \quad .$$

$$) \quad \mu \quad x^2 + x + = 0, \quad 2 + + = 0 \quad (2).$$

$$\mu \quad \frac{1}{\mu} \quad x^2 + x + = 0 \quad \mu$$

$$\left(\frac{1}{\mu}\right)^2 + \frac{1}{\mu} + = 0 \Leftrightarrow \frac{1}{\mu^2} + \frac{1}{\mu} + = 0 \Leftrightarrow \frac{1}{\mu^2} + \frac{1}{\mu} + 2 = 0 \Leftrightarrow + + 2 = 0$$

$$(2).$$

$$) \quad (-1)^2 + 4 - 5 = 0 \Leftrightarrow 2 + 4 - 5 = 0 \Leftrightarrow = 1 \quad = -5.$$

$$= 1 \quad | -1| = 1 \Leftrightarrow (-1 = 1 \Leftrightarrow = 2) \quad (-1 = -1 \Leftrightarrow = 0).$$

$$= -5 \quad | -1| = -5.$$

$$) \text{ i. } \neq 1 \quad > 0 \quad :$$

$$\alpha + \frac{9}{\alpha} \geq 6 \Leftrightarrow \alpha \cdot \alpha + \frac{9}{\alpha} \geq 6\alpha \Leftrightarrow \alpha^2 - 6\alpha + 9 \geq 0 \Leftrightarrow (\alpha - 3)^2 \geq 0$$

$$\text{ii. } 2 + 9 \geq 6 \quad 2 \quad : 4 + 9 \geq 6^2,$$

$$\mu \quad \mu \quad : (\alpha^2 + 9)(\beta^4 + 9) \geq 36\alpha\beta^2$$