

Β ΛΥΚΕΙΟΥ ΑΛΓΕΒΡΑ

17.16

$$\begin{aligned}\alpha' \text{ μέλος} &= x^2 + y^2 = (\alpha\eta\omega + \beta\sigma v\omega)^2 + (\alpha\sigma v\omega - \beta\eta\omega)^2 = \\&= \alpha^2\eta\omega^2 + 2\alpha\beta\cdot\eta\omega\cdot\sigma v\omega + \beta^2\sigma v^2\omega + \alpha^2\sigma v^2\omega - 2\alpha\beta\cdot\eta\omega\cdot\sigma v\omega + \beta^2\eta\omega^2 = \\&= \alpha^2\eta\omega^2 + \alpha^2\sigma v^2\omega + \beta^2\sigma v^2\omega + \beta^2\eta\omega^2 = \\&= \alpha^2(\eta\omega^2 + \sigma v^2\omega) + \beta^2(\sigma v^2\omega + \eta\omega^2) = \\&= \alpha^2 + \beta^2 = \\&= \beta' \text{ μέλος}\end{aligned}$$