

13.11 1)

$$\begin{aligned}\alpha' \text{ μέλος} &= 16x^2 + 9y^2 \stackrel{\substack{x=3\eta\mu\omega \\ y=4\sigma\upsilon\nu\omega}}{=} 16(3\eta\mu\omega)^2 + 9(4\sigma\upsilon\nu\omega)^2 = 16 \cdot 9\eta\mu^2\omega + 9 \cdot 16\sigma\upsilon\nu^2\omega = \\ &= 144\eta\mu^2\omega + 144\sigma\upsilon\nu^2\omega = 144(\eta\mu^2\omega + \sigma\upsilon\nu^2\omega) = 144 \cdot 1 = 144 = \\ &= \beta' \text{ μέλος}\end{aligned}$$

13.11 2)

$$\begin{aligned}\alpha' \text{ μέλος} &= x^2 + y^2 = (2\sigma\upsilon\nu\omega)^2 + (2\eta\mu\omega)^2 = \\ &= 4\sigma\upsilon\nu^2\omega + 4\eta\mu^2\omega = 4(\eta\mu^2\omega + \sigma\upsilon\nu^2\omega) = 4 = \\ &= \beta' \text{ μέλος}\end{aligned}$$

13.11 3)

$$\begin{aligned}\alpha' \text{ μέλος} &= \kappa^2 + \lambda^2 = [(3\alpha+1)\eta\mu\omega]^2 + [(3\alpha+1)\sigma\upsilon\nu\omega]^2 = \\ &= (3\alpha+1)^2 \eta\mu^2\omega + (3\alpha+1)^2 \sigma\upsilon\nu^2\omega = (3\alpha+1)^2 (\eta\mu^2\omega + \sigma\upsilon\nu^2\omega) = \\ &= (3\alpha+1)^2 = 9\alpha^2 + 6\alpha + 1 = \\ &= \beta' \text{ μέλος}\end{aligned}$$

13.11 4)

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