

Β ΛΥΚΕΙΟΥ ΑΛΓΕΒΡΑ

13.5 1)

$$\alpha) \quad \alpha' \text{ μέλος} = \eta\mu^2\omega - \sin^2\omega \stackrel{\sin^2\omega=1-\eta\mu^2\omega}{=} \eta\mu^2\omega - (1 - \eta\mu^2\omega) = \eta\mu^2\omega - 1 + \eta\mu^2\omega = 2\eta\mu^2\omega - 1 = \beta' \text{ μέλος}$$

$$\beta) \quad \alpha' \text{ μέλος} = \frac{1 - \eta\mu^4\omega}{\sin^2\omega} = \frac{(1 - \eta\mu^2\omega)(1 + \eta\mu^2\omega)}{\sin^2\omega} \stackrel{1 - \eta\mu^2\omega = \sin^2\omega}{=} \frac{\cancel{\sin^2\omega} (1 + \eta\mu^2\omega)}{\cancel{\sin^2\omega}} = 1 + \eta\mu^2\omega = \beta' \text{ μέλος}$$

13.5 2)

$$\alpha' \text{ μέλος} = \eta\mu^2\omega - \sin^2\omega = (1 - \sin^2\omega) - \sin^2\omega = 1 - 2\sin^2\omega = \beta' \text{ μέλος}$$

13.5 3)

$$\alpha' \text{ μέλος} = \frac{1 - 2\eta\mu^2\omega}{2\sin^2\omega - 1} = \frac{1 - 2(1 - \sin^2\omega)}{2\sin^2\omega - 1} = \frac{1 - 2 + 2\sin^2\omega}{2\sin^2\omega - 1} = \frac{2\sin^2\omega - 1}{2\sin^2\omega - 1} = 1 = \beta' \text{ μέλος}$$

13.5 4)

$$\begin{aligned} \alpha' \text{ μέλος} &= \sin^4\omega - \eta\mu^4\omega = (\sin^2\omega + \eta\mu^2\omega)(\sin^2\omega - \eta\mu^2\omega) = \\ &= 1 \cdot (\sin^2\omega - \eta\mu^2\omega) = 1 - \eta\mu^2\omega - \eta\mu^2\omega = 1 - 2\eta\mu^2\omega = \\ &= \beta' \text{ μέλος} \end{aligned}$$

13.5 5)

$$\begin{aligned} \alpha' \text{ μέλος} &= \eta\mu^4\omega - \sin^4\omega = (\eta\mu^2\omega + \sin^2\omega)(\eta\mu^2\omega - \sin^2\omega) = \\ &= 1 \cdot (\eta\mu^2\omega - \sin^2\omega) = \eta\mu^2\omega - (1 - \eta\mu^2\omega) = 2\eta\mu^2\omega - 1 = \\ &= 2(1 - \sin^2\omega) - 1 = 1 - 2\sin^2\omega = \\ &= \beta' \text{ μέλος} \end{aligned}$$

13.5 6)

$$\begin{aligned} \alpha' \text{ μέλος} &= \frac{1 - \sin^4\omega}{\eta\mu^2\omega} = \frac{(1 - \sin^2\omega)(1 + \sin^2\omega)}{\eta\mu^2\omega} = \frac{\eta\mu^2\omega(1 + \sin^2\omega)}{\eta\mu^2\omega} = \\ &= 1 + \sin^2\omega = 1 + 1 - \eta\mu^2\omega = 2 - \eta\mu^2\omega = \\ &= \beta' \text{ μέλος} \end{aligned}$$