

Β ΛΥΚΕΙΟΥ ΑΛΓΕΒΡΑ

14.8 1)

$$\alpha) \quad \alpha' \text{ μέλος} = \eta\mu(\pi - x) + \eta\mu\left(\frac{\pi}{2} - x\right) + \eta\mu(\pi + x) + \eta\mu\left(\frac{3\pi}{2} - x\right)$$

$$\eta\mu(\pi - x) = \eta\mu x, \quad \eta\mu\left(\frac{\pi}{2} - x\right) = \sigma\upsilon\nu x, \quad \eta\mu(\pi + x) = -\eta\mu x, \quad \eta\mu\left(\frac{3\pi}{2} - x\right) = -\sigma\upsilon\nu x$$

$$= \eta\mu x + \sigma\upsilon\nu x - \eta\mu x - \sigma\upsilon\nu x = 0 = \beta' \text{ μέλος}$$

$$\beta) \quad \frac{\eta\mu(180^\circ - x) \cdot \epsilon\varphi(270^\circ + x)}{\eta\mu(90^\circ - x) \cdot \epsilon\varphi(360^\circ - x)} \stackrel{\epsilon\varphi(2\pi - x) = -\epsilon\varphi x}{=} \frac{\eta\mu x \cdot (-\sigma\varphi x)}{\sigma\upsilon\nu x \cdot (-\epsilon\varphi x)} = \frac{-\eta\mu x \cdot \sigma\varphi x}{-\cancel{\sigma\upsilon\nu x} \cdot \frac{\eta\mu x}{\cancel{\sigma\upsilon\nu x}}} = \frac{\cancel{\eta\mu x} \cdot \sigma\varphi x}{\cancel{\eta\mu x}} = \sigma\varphi x$$

14.8 2)

$$\sigma\upsilon\nu(8\pi - \omega) = \sigma\upsilon\nu(-\omega) = \sigma\upsilon\nu\omega$$

14.8 3)

$$\sigma\varphi\left(\frac{9\pi}{2} + \omega\right) = \sigma\upsilon\nu\left(\frac{8\pi}{2} + \frac{\pi}{2} + \omega\right) = \sigma\upsilon\nu\left(4\pi + \frac{\pi}{2} + \omega\right) = \sigma\upsilon\nu\left(\frac{\pi}{2} + \omega\right) = -\eta\mu\omega$$

14.8 4)

$$\epsilon\varphi(13\pi + \omega) = \epsilon\varphi(12\pi + \pi + \omega) = \epsilon\varphi(\pi + \omega) = \epsilon\varphi\omega$$

14.8 5)

$$\sigma\upsilon\nu\left(\frac{11\pi}{2} + \omega\right) = \sigma\upsilon\nu\left(\frac{10\pi}{2} + \frac{\pi}{2} + \omega\right) = \sigma\upsilon\nu\left(5\pi + \frac{\pi}{2} + \omega\right) =$$

$$= \sigma\upsilon\nu\left(4\pi + \pi + \frac{\pi}{2} + \omega\right) = \sigma\upsilon\nu\left(\pi + \frac{\pi}{2} + \omega\right) = \sigma\upsilon\nu\left(\frac{3\pi}{2} + \omega\right) = \eta\mu\omega$$

14.8 6)

$$\sigma\varphi(19\pi - \omega) = \sigma\varphi(18\pi + \pi - \omega) = \sigma\varphi(\pi - \omega) = -\sigma\varphi\omega$$

14.8 7)

$$\eta\mu\left(\frac{37\pi}{2} - \omega\right) = \eta\mu\left(\frac{36\pi}{2} + \frac{\pi}{2} - \omega\right) = \eta\mu\left(18\pi + \frac{\pi}{2} - \omega\right) = \eta\mu\left(\frac{\pi}{2} - \omega\right) = \sigma\upsilon\nu\omega$$