

Β ΛΥΚΕΙΟΥ ΑΛΓΕΒΡΑ

17.19

$$\begin{aligned}\alpha' \text{ μέλος} &= \left(1 + \frac{\sigma v x - 1}{\eta \mu x}\right) \left(1 + \frac{\eta \mu x + 1}{\sigma v x}\right) = \\&= 1 + \frac{\eta \mu x + 1}{\sigma v x} + \frac{\sigma v x - 1}{\eta \mu x} + \frac{(\sigma v x - 1)(\eta \mu x + 1)}{\eta \mu x \cdot \sigma v x} = \\&= 1 + \frac{\eta \mu x (\eta \mu x + 1)}{\sigma v x \cdot \eta \mu x} + \frac{\sigma v x (\sigma v x - 1)}{\eta \mu x \cdot \sigma v x} + \frac{\sigma v x \cdot \eta \mu x - \eta \mu x + \sigma v x - 1}{\eta \mu x \cdot \sigma v x} = \\&= 1 + \frac{\eta \mu^2 x + \eta \mu x + \sigma v^2 x - \sigma v x + \eta \mu x \cdot \sigma v x - \eta \mu x + \sigma v x - 1}{\eta \mu x \cdot \sigma v x} = \\&= \frac{\eta \mu x \cdot \sigma v x + \eta \mu^2 x + \sigma v^2 x + \eta \mu x \cdot \sigma v x - 1}{\eta \mu x \cdot \sigma v x} = \\&= \frac{2 \eta \mu x \cdot \sigma v x}{\eta \mu x \cdot \sigma v x} = 2 = \\&= \beta' \text{ μέλος}\end{aligned}$$