

α) Είναι:

$$\begin{aligned}\frac{\alpha_5}{\alpha_2} = 27 &\Leftrightarrow \frac{\alpha_1 \lambda^{5-1}}{\alpha_1 \lambda^{2-1}} = 27 \Leftrightarrow \\ &\Leftrightarrow \frac{\lambda^4}{\lambda} = 27 \Leftrightarrow \lambda^3 = 27 \Leftrightarrow \\ &\Leftrightarrow \lambda^3 = 3^3 \Leftrightarrow \lambda = 3\end{aligned}$$

β) Ισχύει ότι:

$$\begin{aligned}S_4 = 200 &\Leftrightarrow \alpha_1 \frac{\lambda^4 - 1}{\lambda - 1} = 200 \Leftrightarrow \\ &\Leftrightarrow \alpha_1 \frac{3^4 - 1}{3 - 1} = 200 \Leftrightarrow \\ &\Leftrightarrow \alpha_1 \frac{81 - 1}{2} = 200 \Leftrightarrow \\ &\Leftrightarrow 40\alpha_1 = 200 \Leftrightarrow \alpha_1 = 5\end{aligned}$$