

α) Είναι:

$$\begin{aligned} A + B + \Gamma &= (\sqrt{2})^6 + (\sqrt[3]{3})^6 + (\sqrt[6]{6})^6 = \left(2^{\frac{1}{2}}\right)^6 + \left(3^{\frac{1}{3}}\right)^6 + \left(6^{\frac{1}{6}}\right)^6 = \\ &= 2^{\frac{6}{2}} + 3^{\frac{6}{3}} + 6^{\frac{6}{6}} = 2^3 + 3^2 + 6 = 8 + 9 + 6 = 23 \end{aligned}$$

β) Είναι: $\sqrt[3]{3} = 3^{\frac{1}{3}} = (3^2)^{\frac{1}{6}} = \sqrt[6]{9}$. Τότε:

$$6 < 9 \Leftrightarrow \sqrt[6]{6} < \sqrt[6]{9} \Leftrightarrow \sqrt[6]{6} < \sqrt[3]{3}$$