

Wurzeln Aufgabe 123

$$\begin{aligned}\frac{\sqrt[4]{2} * \sqrt{3} * \sqrt[6]{2}}{\sqrt{2} * \sqrt[4]{3}} &= \frac{2^{\frac{1}{4}} * 3^{\frac{1}{2}} * 2^{\frac{1}{6}}}{2^{\frac{1}{2}} * 3^{\frac{1}{4}}} = 2^{\frac{1}{4} + \frac{1}{6} - \frac{1}{2}} * 3^{\frac{1}{2} - \frac{1}{4}} = 2^{\frac{3+2-6}{12}} * 3^{\frac{2-1}{4}} = \\ &= 2^{\frac{3+2-6}{12}} * 3^{\frac{2-1}{4}} = 2^{-\frac{1}{12}} * 3^{\frac{1}{4}} = \frac{\sqrt[4]{3}}{\sqrt[12]{2}} = \frac{\sqrt[12]{3^3}}{\sqrt[12]{2}} = \sqrt[12]{\frac{3^3}{2}} = \sqrt[12]{\frac{27}{2}} = \sqrt[12]{13,5}\end{aligned}$$