Di., 20.10.2020

S. 33/3 a) $5^{\frac{1}{2}} \cdot 5^{\frac{1}{4}} = 5^{\frac{1}{2}+\frac{1}{4}} = 5^{\frac{3}{4}} = \sqrt[4]{5^3}$

d) $2^{-\frac{2}{3}} : 2^{-0,5} = 2^{-\frac{2}{3}-(-0,5)}$

$= 2^{-\frac{1}{6}} = \sqrt[6]{2^{-1}} = \sqrt[6]{\frac{1}{2}}$

g) $2^{\frac{1}{4}} \cdot 3^{\frac{1}{4}} = (2 \cdot 3)^{\frac{1}{4}} = 6^{\frac{1}{4}} = \sqrt[4]{6}$

k) $x^{\frac{2}{3}} : (2x)^{\frac{2}{3}} = (x : 2x)^{\frac{2}{3}}$

$= \left(\frac{x}{2x}\right)^{\frac{2}{3}} = \left(\frac{1}{2}\right)^{\frac{2}{3}} = \sqrt[3]{\left(\frac{1}{2}\right)^2} = \sqrt[3]{\frac{1}{4}}$

n) $\left(4^{\frac{1}{5}}\right)^{-\frac{3}{4}} = 4^{\frac{1}{5} \cdot \left(-\frac{3}{4}\right)} = 4^{-\frac{3}{20}}$

$= \sqrt[20]{4^{-3}} = \sqrt[20]{\frac{1}{4^3}} = \sqrt[20]{\frac{1}{64}}$

q) $\left(\sqrt[3]{2^4}\right)^{\frac{1}{2}} = \left[\left(2^4\right)^{\frac{1}{3}}\right]^{\frac{1}{2}} =$

$= 2^{4 \cdot \frac{1}{3} \cdot \frac{1}{2}} = 2^{\frac{2}{3}} = \sqrt[3]{2^2} = \sqrt[3]{4}$

5a) $\sqrt[3]{4} \cdot \sqrt[4]{4} = 4^{\frac{1}{3}} \cdot 4^{\frac{1}{4}} =$

$= 4^{\frac{1}{3}+\frac{1}{4}} =$

$= 4^{\frac{7}{12}} = \sqrt[12]{4^7}$

d) $\sqrt[3]{\sqrt[3]{5}} = \left(5^{\frac{1}{3}}\right)^{\frac{1}{3}} = 5^{\frac{1}{3} \cdot \frac{1}{3}} = 5^{\frac{1}{9}} = \sqrt[9]{5}$

g) $\sqrt[n]{\sqrt[3]{a}} = \left(a^{\frac{1}{3}}\right)^{\frac{1}{n}} = a^{\frac{1}{3}\cdot\frac{1}{n}} = a^{\frac{1}{3n}} = \sqrt[3n]{a}$

S. 34/8 b, $\left(\sqrt[3]{320} : \sqrt[3]{5}\right) : 4 =$

$= \left(320^{\frac{1}{3}} : 5^{\frac{1}{3}}\right) : 4$

$= \left(320 : 5\right)^{\frac{1}{3}} : 4$

$= 64^{\frac{1}{3}} : 4$

$= \left(2^6\right)^{\frac{1}{3}} : 4$

$= 2^2 : 4 = \underline{1}$

Hausaufgabe → ~~Foto~~ Mappe

S. 34 | 8 c, d, e

ohne Taschenrechner!