

Aufgabe 17

a) $\left(2^{\frac{1}{2}}\right)^4 = 2^{\frac{1}{2} \cdot 4} = 2^2 = 4$

b) $\left(5^{\frac{2}{3}}\right)^{\frac{1}{4}} = 5^{\frac{2}{3} \cdot \frac{1}{4}} = 5^{\frac{1}{6}} = \sqrt[6]{5}$

c) $\left(3^{\frac{5}{2}}\right)^{\frac{4}{5}} = 3^{\frac{5}{2} \cdot \frac{4}{5}} = 3^2 = 9$

d) $\left(10^{-\frac{3}{12}}\right)^{\frac{4}{9}} = 10^{-\frac{3}{12} \cdot \frac{4}{9}} = 10^{-\frac{1}{9}} = \frac{1}{10^{\frac{1}{9}}} = \frac{1}{\sqrt[9]{10}}$

e) $\left(4^{\frac{1}{5}}\right)^{-\frac{5}{4}} = 4^{-\frac{1}{5} \cdot \frac{5}{4}} = 4^{-\frac{1}{4}} = \frac{1}{4^{\frac{1}{4}}} = \frac{1}{\sqrt[4]{4}}$

f) $\left(6^{-\frac{6}{5}}\right)^{-\frac{10}{9}} = 6^{\frac{6}{5} \cdot \frac{10}{9}} = 6^{\frac{4}{3}} = \sqrt[3]{6^4} = \sqrt[3]{1296}$