

Uitwerkingen diagnostische toets hoofdstuk 3

- $87^0 = 1$
 - $9^{-1} = \frac{1}{9}$
 - $1000^{-\frac{1}{3}} = (10^3)^{-\frac{1}{3}} = 10^{3 \cdot -\frac{1}{3}} = 10^{-1} = \frac{1}{10}$
 - $11 \cdot 10^{-2} = \frac{11}{100} (= 0,11)$
- $(\frac{1}{9})^{-\frac{1}{2}} = (3^{-2})^{-\frac{1}{2}} = 3^{-2 \cdot -\frac{1}{2}} = 3^1 = 3$
 - $(\sqrt[3]{\frac{2}{8}})^2 = (\frac{2}{8})^{\frac{2}{3}} = (\frac{1}{4})^{\frac{2}{3}} = (2^{-2})^{\frac{2}{3}} = 2^{-\frac{4}{3}} = \frac{1}{2^{\frac{4}{3}}} = \frac{1}{2\sqrt[3]{2}} \quad (= \frac{\sqrt[3]{2^2}}{2\sqrt[3]{2^3}} = \frac{1}{4}\sqrt[3]{4})$
 - $\sqrt[5]{x^2\sqrt{x}} = \sqrt[5]{x^2 \cdot x^{\frac{1}{2}}} = \sqrt[5]{x^{2\frac{1}{2}}} = x^{\left(\frac{2\frac{1}{2}}{5}\right)} = x^{\frac{1}{2}} = \sqrt{x}$
 - $\sqrt[3]{27^2} = 27^{\frac{2}{3}} = (3^3)^{\frac{2}{3}} = 3^{3 \cdot \frac{2}{3}} = 3^2 = 9$
- $\sqrt{2^7 \cdot 7} = 2^{3\frac{1}{2}} \cdot 7^{\frac{1}{2}}$
 - $\frac{1}{3\sqrt[3]{3}} = \frac{1}{3^1 \cdot 3^{\frac{1}{3}}} = \frac{1}{3^{1\frac{1}{3}}} = 3^{-1\frac{1}{3}}$
 - $\frac{\sqrt[3]{a^2b^3c^4}}{\sqrt{a^2b^3c^4}} = a^{\frac{2}{3}}b^{\frac{4}{3}} \cdot a^{-1}b^{-\frac{3}{2}}c^{-2} = a^{-\frac{1}{3}}b^{-\frac{1}{2}}c^{-\frac{2}{3}}$
 - $\frac{1}{x\sqrt{x}} = x^{-1\frac{1}{2}}$
- $a^{2\frac{1}{2}} = a^2\sqrt{a}$
 - $6^{\frac{4}{5}} = \sqrt[5]{6^4}$
 - $(a^2b^3c^4)^{\frac{1}{2}} = ab^{1\frac{1}{2}}c^2 = abc^2\sqrt{b}$
 - $(\frac{1}{2})^{\frac{2}{3}} = (2^{-1})^{\frac{2}{3}} = 2^{-\frac{2}{3}} = 2^{-1} \cdot 2^{\frac{1}{3}} = \frac{1}{2}\sqrt[3]{2}$