

Potęgowniki.
 $m \in \mathbb{N}$

$a^m = \underbrace{a \cdot a \cdot \dots \cdot a}_m$

$a^5 = \underbrace{a \cdot a \cdot a \cdot a \cdot a}_5$
 다섯 번 곱함.
 a - d. m. k. d. d. v.

$0^m = 0$ $m > 0$ $1^m = 1$

$a \in \mathbb{R} \setminus \{0\}$
 $a^0 = 1$ $a \neq 0$

~~$a^0 = 1$ - nie istnieje!~~

$a \in \mathbb{R} \setminus \{0\}$
 $a^{-m} = \frac{1}{a^m} = \left(\frac{1}{a}\right)^m$

$\left(\frac{a}{b}\right)^{-m} = \left(\frac{b}{a}\right)^m$

$a^l \cdot a^k = a^{l+k}$
 $\frac{a^l}{a^k} = a^{l-k}$
 $(a^l)^k = a^{l \cdot k}$

$1 = a^0 = a^{m-n} = \frac{a^m}{a^n} = \underbrace{a^m \cdot \frac{1}{a^n}}_{=1} = \underbrace{a^m}_{=1} \cdot \underbrace{\frac{1}{a^n}}_{=1}$

$a^{-n} = \left(\frac{1}{a}\right)^n = \frac{1}{a^n}$

$a^{\frac{l}{m}} = \sqrt[m]{a^l} = m\sqrt[l]{a^l}$ $a^{\frac{l}{3}} =$

$81^{\frac{3}{4}} = \left(\sqrt[4]{81}\right)^3 = 3^3 = 27$ $81 = 3^4$

$4^{-\frac{2}{3}} = \left(4^{-1}\right)^{\frac{2}{3}} = \left(\frac{1}{4}\right)^{\frac{2}{3}} = \sqrt[3]{\frac{1}{4^2}} = \sqrt[3]{\frac{1}{16}} = \frac{\sqrt[3]{1}}{\sqrt[3]{16}} = \frac{1}{\sqrt[3]{16}} = \frac{\sqrt[3]{1}}{\sqrt[3]{2^4}} = \frac{\sqrt[3]{1}}{\sqrt[3]{2} \cdot \sqrt[3]{2} \cdot \sqrt[3]{2} \cdot \sqrt[3]{2}}$

$\sqrt[n]{a^m} = a^{\frac{m}{n}}$