Potęgowanie

$$a^n = \underbrace{a \cdot a \cdot \ldots \cdot a}_{n}$$

$$3^4 = 3 \cdot 3 \cdot 3 \cdot 3 = 81$$

$$a^0 = 1$$

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

$\sqrt{4} = 2$ bo $2^2 = 4$

-2 bo $(-2)^2 = 4$

$\sqrt{9} = 3$ bo $3^2 = 9$

-3 bo $(-3)^2 = 9$

$\sqrt[3]{27} = 3$ bo $3^3 = 27$

$\cancel{-3}$

$\sqrt[4]{16} = 2$ bo $2^4 = 16$

-2 bo $(-2)^4 = 16$

$$(-2)^2 = (-2)\cdot(-2) = 4$$

$$-2^2 = -2\cdot 2 = -4$$

$$\sqrt[n]{a} = a^{\frac{1}{n}}$$

$$8^{\frac{1}{3}} = \sqrt[3]{8} = 2 \quad \text{bc} \quad 2^3 = 8$$

$$4^{-\frac{1}{2}} = \left(\frac{1}{4}\right)^{\frac{1}{2}} = \sqrt{\frac{1}{4}} = \frac{1}{2} \quad \text{bo } \left(\frac{1}{2}\right)^2 = \frac{1}{4}$$

$$27^{-\frac{1}{3}} = \left(\frac{1}{27}\right)^{\frac{1}{3}} = \sqrt[3]{\frac{1}{27}} = \frac{1}{3}$$

$$\left(\frac{1}{81}\right)^{-\frac{1}{4}} = 81^{\frac{1}{4}} = \sqrt[4]{81} = 3$$

$$a^{\frac{m}{n}} = \left(\sqrt[n]{a}\right)^m$$

$$-8^{\frac{2}{3}} = \left(\sqrt[3]{-8}\right)^2 = (-2)^2 = 4$$

$$16^{-\frac{3}{4}} = \left(\frac{1}{16}\right)^{\frac{3}{4}} = \left(\sqrt[4]{\frac{1}{16}}\right)^3 = \left(\frac{1}{2}\right)^3 = \frac{1}{8}$$

$$25^{-\frac{3}{2}} = \left(\frac{1}{25}\right)^{\frac{3}{2}} = \left(\sqrt[2]{\frac{1}{25}}\right)^{3} = \left(\frac{1}{5}\right)^{3} = \frac{1}{125}$$

$$64^{-\frac{5}{6}} = \left(\frac{1}{64}\right)^{\frac{5}{6}} = \left(\sqrt[6]{\frac{1}{64}}\right)^{5} = \left(\frac{1}{2}\right)^{5} = \frac{1}{32}$$

$$\left(\frac{1}{81}\right)^{-\frac{3}{4}} = (81)^{\frac{3}{4}} = \left(\sqrt[4]{81}\right)^{3} = 3^{3} = 27$$

$$125^{-\frac{2}{3}} = \left(\frac{1}{125}\right)^{\frac{2}{3}} = \left(\sqrt[3]{\frac{1}{125}}\right)^2 = \left(\frac{1}{5}\right)^2 = \frac{1}{25}$$

$$1000^{-\frac{4}{3}} = \left(\frac{1}{1000}\right)^{\frac{4}{3}} = \left(\sqrt[3]{\frac{1}{1000}}\right)^4 = \left(\frac{1}{10}\right)^4 = \frac{1}{1000}$$

Zadanie

$\left(\frac{1}{4}\right)^{-\frac{5}{2}}$

$49^{-\frac{3}{2}}$

$100^{-\frac{3}{2}}$

$1000000^{-\frac{5}{6}}$