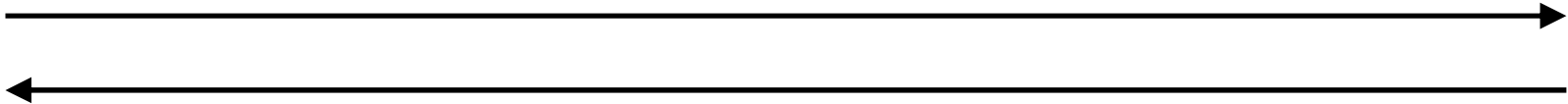


Grundformel

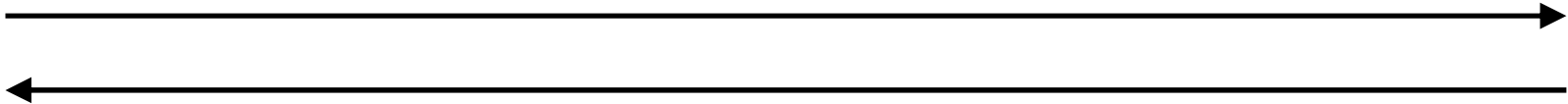
$$\underbrace{a \cdot a \cdot \dots \cdot a}_{n = \text{Anzahl } a} = a^n$$

$n = \text{Anzahl } a$



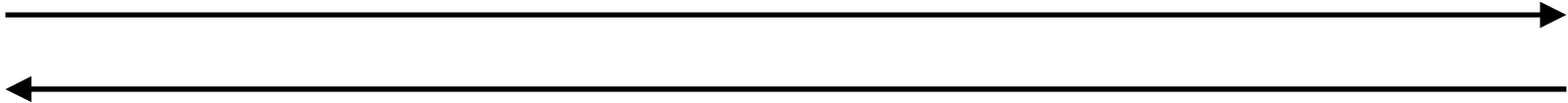
Definition

$$a^0 = 1$$



Vorzeichen positive Basis

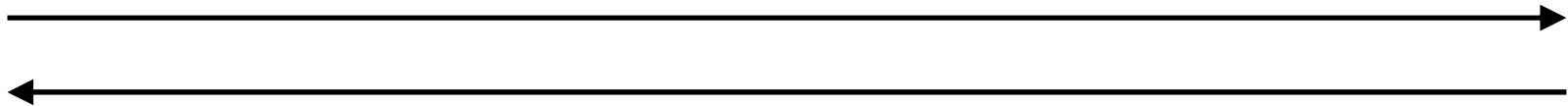
$$\left(+a \right)^n = +a^n$$



Vorzeichen negative Basis

$$\left(\overset{\text{negativ}}{\underbrace{-a}_{2n-1}} \right) = -a^{2n-1}$$

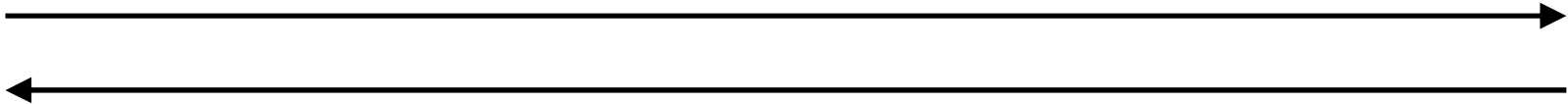
$$\left(\overset{\text{positiv}}{\underbrace{-a}_{2n}} \right) = +a^{2n}$$



Multiplikation «gleiche Basis»

$$a^m \cdot a^n = a^{m+n}$$

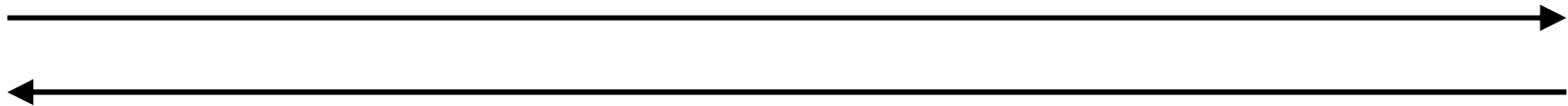
$$\bigcirc^{\square} \cdot \bigcirc^{\triangle} = \bigcirc^{\square + \triangle}$$



Multiplikation «gleiche Hochzahl»

$$a^n \cdot b^n = (a \cdot b)^n$$

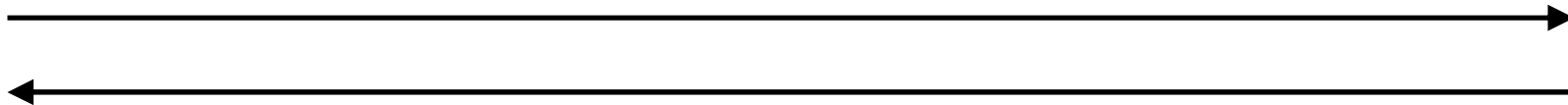
$$\bigcirc^\triangle \cdot \square^\triangle = (\bigcirc \cdot \square)^\triangle$$



Division «gleiche Basis»

$$\frac{a^m}{a^n} = a^{m-n}$$

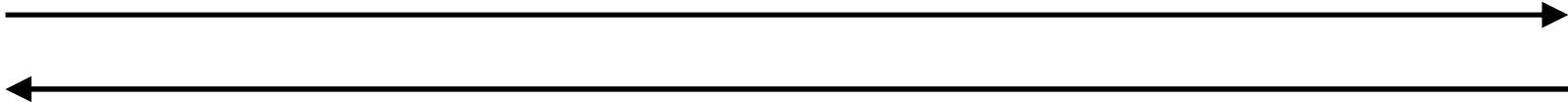
$$\frac{O^{\square}}{O^{\triangle}} = O^{\square-\triangle}$$



Division «gleiche Hochzahl»

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

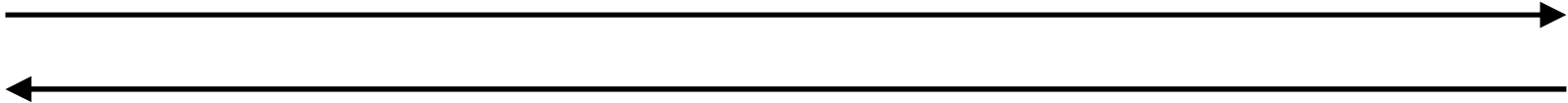
$$\frac{\bigcirc^\triangle}{\square^\triangle} = \left(\frac{\bigcirc}{\square} \right)^\triangle$$



Potenzieren von Potenzen

$$\left(a^m\right)^n = a^{m \cdot n}$$

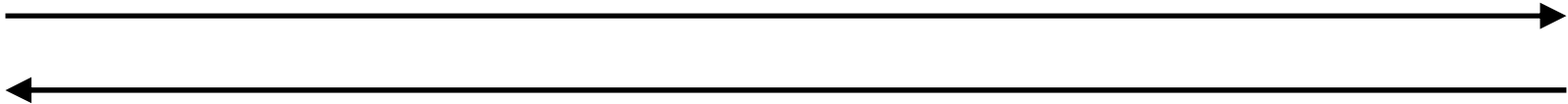
$$\left(0^\square\right)^\triangle = 0^{\square \cdot \triangle}$$



«Spezialfall»

$$a^{-n} = \frac{1}{a^n}$$

$$O^{-\Delta} = \frac{1}{O^{\Delta}}$$



Radizieren

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

$$\sqrt{\bigcirc^{\square}} = \bigcirc^{\frac{\square}{\triangle}}$$

