

Puteri cu exponent rațional

Fie $a \geq 0$, $\frac{m}{n} \in \mathbb{Q}$, $n \geq 2$.

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

• Dacă $m = 1 \Rightarrow a^{\frac{1}{n}} = \sqrt[n]{a}$

Proprietățile puterilor cu exponent rațional ($a, b > 0$):

1. $a^{\frac{m}{n}} \cdot a^{\frac{p}{q}} = a^{\frac{m}{n} + \frac{p}{q}}$

2. $\frac{a^{\frac{m}{n}}}{a^{\frac{p}{q}}} = a^{\frac{m}{n} - \frac{p}{q}}$

3. $(a \cdot b)^{\frac{m}{n}} = a^{\frac{m}{n}} \cdot b^{\frac{m}{n}}$

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

5. $\left(a^{\frac{m}{n}}\right)^{\frac{p}{q}} = a^{\frac{m}{n} \cdot \frac{p}{q}}$