Puteri cu exponent rațional

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

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

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

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

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