

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