

Formulele inmultirii prescurtate. Puteri

1. $(a \pm b)^2 = a^2 \pm 2ab + b^2$.
2. $a^2 - b^2 = (a + b)(a - b)$.
3. $(a \pm b)^3 = a^3 \pm 3a^2b + 3ab^2 \pm b^3 = a^3 \pm b^3 \pm 3ab(a \pm b)$.
4. $a^3 \pm b^3 = (a \pm b)(a^2 \mp ab + b^2)$.
5. $(a_1 a_2 \dots a_m)^n = a_1^n a_2^n \dots a_m^n \quad m, n \in \mathbb{N}, a_i \geq 0, i = \overline{1, n}$.
6. $a^{n_1} a^{n_2} \dots a^{n_m} = a^{n_1 + n_2 + \dots + n_m} \quad m, n \in \mathbb{N}, a \geq 0$.
7. $\frac{a^m}{a^n} = a^{m-n} \quad m, n \in \mathbb{N}, a > 0$.
8. $(a^m)^n = a^{m \cdot n} \quad m, n \in \mathbb{N}, a > 0$.
9. $a^{-n} = \frac{1}{a^n} \quad n \in \mathbb{N}, a > 0$.
10. $a^{\frac{m}{n}} = \sqrt[n]{a^m} \quad m, n \in \mathbb{N}, n \geq 2$.
11. $\sqrt[n]{a^m} = \begin{cases} a^{\frac{m}{n}}, & \text{daca } m = 2k + 1 \\ |a|^{\frac{m}{n}}, & \text{daca } m = 2k \end{cases} \quad k, m, n \in \mathbb{N}, n \geq 2$.
12. $(\sqrt[n]{a})^m = \sqrt[n]{a^m} \quad m, n \in \mathbb{N}, n \geq 2$.
13. $\sqrt[n]{a_1 a_2 \dots a_m} = \sqrt[n]{|a_1|} \sqrt[n]{|a_2|} \dots \sqrt[n]{|a_m|} \quad m, n \in \mathbb{N}, n \geq 2$.
14. $\sqrt[n]{\frac{a}{b}} = \frac{\sqrt[n]{|a|}}{\sqrt[n]{|b|}} \quad (b \neq 0); \quad (\sqrt[n]{a+b} \neq \sqrt[n]{a} + \sqrt[n]{b}, a \neq 0, b \neq 0) \quad n \in \mathbb{N}, n \geq 2$.