

BILANGAN BERPANGKAT

1. DEFINISI

$$a^n = \underbrace{a \times a \times a \times \dots \times a}_{n \text{ kali}}$$

a = basis

n = bilangan berpangkat

2. Sifat-sifat

$$\begin{aligned} & \bullet a^m \times a^n = a^{m+n} & \bullet \sqrt[n]{a^m} = a^{\frac{m}{n}} \\ & \bullet \frac{a^m}{a^n} = a^{m-n} & \bullet a^0 = 1, \text{ untuk } a \neq 0 \\ & \bullet (a^m)^n = a^{mn} \\ & \bullet (ab)^m = a^m b^m \\ & \bullet \left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}, \text{ untuk } b \neq 0 \\ & \bullet a^{-n} = \frac{1}{a^n} \end{aligned}$$

Contoh

a. $2^4 \times 2^2 = 2^{4+2} = 2^6 = 64$

b. $2^5 : 2^3 = 2^{5-3} = 2^2 = 4$

c. $(2^2)^3 = 2^{2 \times 3} = 2^6 = 64$

$$\left(\frac{2}{3}\right)^4 = \frac{2^4}{3^4} = \frac{16}{81}$$

d.

$$2^{-3} = \frac{1}{2^3} = \frac{1}{8}$$

e.

$$\sqrt[3]{2^6} = 2^{\frac{6}{3}} = 2^2 = 4$$

f.

g. $2^0 = 1$

h. $7^0 = 1$