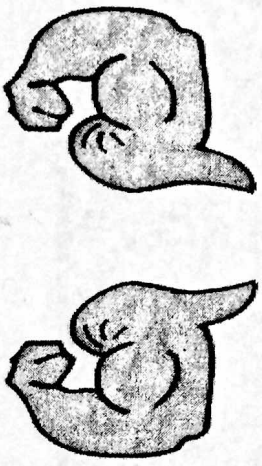


This Pamphlet belongs to:



The Book of POWER (EXPONENTS)

Product of Powers

$$a^m \cdot a^n = a^{m+n}$$
$$3^2 \cdot 3^7 = 3^{2+7} = 3^9$$

To multiply powers having the same base, add the exponents (TB)
P. 424 - on-line
P. 450 - Alg

Power of a Power

$$(a^m)^n = a^{m \cdot n}$$
$$(5^2)^4 = 5^{2 \cdot 4} = 5^8$$

To find a power of a power, multiply the exponents (TB)
P. 432 - on-line
P. 450 - Alg.

Negative Exponent

a^{-n} is the reciprocal of a^n .

$$a^{-n} = \frac{1}{a^n} \quad a \neq 0$$

P. 444 - on-line
P. 456 Alg. 1

Power of a Product

$$(a \cdot b)^m = a^m \cdot b^m$$
$$(2 \cdot 3)^6 = 2^6 \cdot 3^6$$

To find a power of a product, find the power of each factor & multiply. (TB)
P. 433 - on-line
P. 450 - Alg.

Zero Exponent

A nonzero number to the zero power is 1.

$$a^0 = 1 \quad a \neq 0$$
$$5^0 = 1$$

P. 444 - on-line
P. 456 Alg. 1

Quotient of Powers

$$\frac{a^m}{a^n} = a^{m-n} \quad a \neq 0$$
$$\frac{3^7}{3^5} = 3^{7-5} = 3^2$$

To divide powers having the same base, subtract exponents. (TB)
P. 425 - on-line
P. 463 - Alg

Power of a Quotient

$$\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m} \quad b \neq 0$$
$$\left(\frac{4}{5}\right)^3 = \frac{4^3}{5^3}$$

To find a power of a quotient, find the power of the numerator & the power of the denominator & divide. (TB)
P. 463 - Alg