

Notes on Properties of Exponents

The Product Rule: $a^m \cdot a^n = a^{m+n}$ (1) $x^6 \cdot x^1$

The Quotient Rule $\frac{a^m}{a^n} = a^{m-n}$ (2) $\frac{3^6}{3^4}$ (3) $\frac{y^{15}}{y^8}$ (4) $\frac{w^4}{w^4}$

The Power Rule $(a^m)^n = a^{mn}$ (5) $(2^3)^2$

(6) $(m^5)^4$

Product to a Power $(ab)^n = a^n b^n$ (7) $(7x)^2$

(8) $(x^2 y^5 z)^3$

Quotient to a Power $\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$ (9) $\left(\frac{a^3}{b^2}\right)^4$

(10) $(3ab^4)(2a^2b)^3$

(11) $\left(\frac{x^2 y^4}{2xz}\right)^3$

***Other Properties $a^1 = a$
 $a^0 = 1$

