

Practicing the Properties of Exponents

Zero Exponent Property	$a^0 = 1$
Negative Exponent Property	$a^{-b} = \frac{1}{a^b}$
Product of Powers Property	$a^b \cdot a^c = a^{(b+c)}$
Quotient of Powers Property	$\frac{a^b}{a^c} = a^{b-c}$
Power of a Product Property	$(ab)^c = a^c \cdot b^c$
Power of a Quotient Property	$\left(\frac{a}{b}\right)^c = \frac{a^c}{b^c}$
Power of a Power Property	$(a^b)^c = a^{bc}$

Evaluate each expression. Leave your answer in exponential form

1) $2^3 \cdot 3^4$

2) $2^3 \cdot 2^2 \cdot 2^3$

3) $9 \cdot 9^8 \cdot 9^{10}$

4) $(-3)^3 \cdot (-3)^2$

5) $\frac{5^4}{5^6}$

6) $\frac{5^6}{5^2}$

$$7) \quad \frac{3^{-12}}{3^5}$$

$$8) \quad 1^{-5} \times 1^3$$

Evaluate each expression. Leave your answer in standard form (no exponents in answer)

$$9) \quad 3^{-2}$$

$$10) \quad \left(\frac{1}{3}\right)^3$$

$$11) \quad \left(\frac{2}{3}\right)^{-2}$$

$$12) \quad \left(\frac{3}{4}\right)^{-3}$$

$$13) \quad (2^3)^4$$

$$14) \quad (2^{-2})^3$$

$$15) \quad (n^4)^3$$

$$16) \quad ((-4)^2)^4$$

Make a list of some issues you may have with exponents.
If you specify what is giving you trouble, fixing it will be easier

- _____
- _____
- _____
- _____