

Applying Rules of Exponents

PRODUCT PROPERTY: Simplify. Your answer should contain only positive exponents.

1) $2a^3 \cdot a^2b^3$

2) $3x^2y^3 \cdot yx^3$

3) $h^2j^2k^{-3} \cdot 2h^{-3}k^0$

4) $a^{-3}b^4c^4 \cdot 2a^2b^{-4}c^{-3}$

QUOTIENT PROPERTY: Simplify. Your answer should contain only positive exponents.

5) $\frac{3x^{-4}y^{-3}}{4x^2y^4}$

6) $\frac{3m^4n^2}{nm^3}$

7) $\frac{3yx^{-3}z^{-2}}{2x}$

8) $\frac{2m^3p^4q^2}{2m^4p^0q^{-2}}$

POWER PROPERTY: Simplify. Your answer should contain only positive exponents.

9) $(4n^{-1})^2$

10) $(x^4y^0)^0$

11) $(4x^0y^{-3})^3$

12) $(3qp^{-2}r^{-2})^{-3}$

ALL EXPONENT PROPERTIES: Simplify. Your answer should contain only positive exponents.

$$13) \frac{2x^2y^2}{(2y^{-2} \cdot 2y^4)^4}$$

$$14) \frac{yx^2 \cdot (2x^3y^0)^{-4}}{2yx^3}$$

$$15) \left(\frac{2xy}{2x^{-4}y^{-4} \cdot 2x^0} \right)^{-2}$$

$$16) \left(\frac{x^3}{y^3 \cdot 2y^3} \right)^{-1}$$

$$17) \frac{a^0b^4c^2 \cdot a^0b^4c^{-1}}{(2b^3c^2)^4}$$

$$18) \left(\frac{x^2y^2z^2 \cdot 2x^{-4}y^2}{2y^{-1}z^3} \right)^4$$

$$19) \left(\frac{m^{-4}n^3p^3 \cdot 2m^2n^{-4}}{2m^4p^{-1}} \right)^{-3}$$

$$20) \frac{2m^4p^{-3}q^2 \cdot 2m^{-1}}{m^2(2m^{-1}q^3)^{-2}}$$