

## Exponent Practice

Simplify. Your answer should contain only positive exponents.

1)  $4bca^2 \cdot 2a^3b^2c^4$

$$8b^3ca^5$$

2)  $4jkh^2 \cdot 2jh^2k^4 \cdot 4jh^2$

$$32j^3k^5h^6$$

ADD  
THE  
EXPONENTS

3)  $2p^3q^2r^2 \cdot 4p^2q^3r^4$

$$8p^5q^5r^6$$

4)  $2m^2p^3q^3 \cdot 3pq^4$

$$6m^2p^4q^7$$

5)  $(2h^4j^4k^3)^3$

$$\begin{array}{c} 3 \quad 12 \quad 12 \quad 9 \\ 2 \quad h \quad j \quad k \\ \downarrow \\ 8 \quad h^{12} \quad j^{12} \quad k^9 \end{array}$$

MULTIPLY  
THE  
EXPONENTS

6)  $(4n^3)^3$

$$\begin{array}{c} 3 \quad 9 \\ 4 \quad n \\ \downarrow \\ 64n^9 \end{array}$$

7)  $(4yx^3z^2)^3$

$$\begin{array}{c} 3 \quad 3 \quad 9 \quad 6 \\ 4 \quad y \quad x^3 \quad z^2 \\ \downarrow \\ 64y^3x^9z^6 \end{array}$$

8)  $(3h^2j^4)^2$

$$\begin{array}{c} 2 \quad 4 \quad 8 \\ 3 \quad h^2 \quad j^4 \\ \downarrow \\ 9h^4j^8 \end{array}$$

9)  $\frac{4ab^3}{3a^2b^3c^2}$

$$\frac{4}{3ac^2}$$

SUBTRACT  
THE  
EXPONENTS.  
TOP - BOTTOM

10)  $\frac{a^3c^2}{ab^4c^2}$

$$\frac{a^2}{b^4}$$

$$11) \frac{4hj^3k^4}{3k}$$

$$\frac{4hj^3k^3}{3}$$

$$12) \frac{4m^3p^3}{p^2}$$

$$4m^3p$$

$$13) zy^4 \cdot (zx^2y^2)^2$$

$$zy^4 \cdot zx^4y^4$$

$$z^3x^4y^8$$

$$14) \frac{y^2z^3 \cdot yx^2z^2}{xy^3z^3}$$

$$\frac{y^3x^2z^5}{xy^3z^3}$$

$$xz^2$$

$$15) \frac{(2xy^3z^4)^4}{2x^4z^3}$$

$$\frac{16x^4y^{12}z^{16}}{2x^4z^3}$$

$$8y^{12}z^{13}$$

$$16) \left( \frac{p^3q^3r^3 \cdot rp^3q^2}{qrp^2} \right)^4$$

$$\left( \frac{p^6q^5r^4}{qrp^2} \right)^2$$

$$(p^4q^4r^3)^2$$

$$p^8q^8r^6$$

$$17) \frac{2pq^3r^4 \cdot p^3q^3}{(p^2q^2r^2)^4}$$

$$\frac{2p^4q^6r^4}{p^8q^8r^8}$$

$$\frac{2}{p^4q^2r^4}$$