

Unit 1.2 More multiplication properties of exponents

Period _____

Simplify. Your answer should contain only positive exponents.

1) $(3^3)^4$
 3^{12}

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

3) $(2b^3)^2$
 $4b^6$

4) $(2n)^2$
 $4n^2$

5) $(3a^4)^3$
 $27a^{12}$

6) $(x^2)^3$
 x^6

7) $(2n^3)^4$
 $16n^{12}$

8) $(3x^4)^2$
 $9x^8$

9) $(4v^4)^2$
 $16v^8$

10) $(2x^3y^3)^4$
 $16x^{12}y^{12}$

11) $(2x^3y^3)^2$
 $4x^6y^6$

12) $(3vu^4)^4$
 $81v^4u^{16}$

13) $(3xy)^2$
 $9x^2y^2$

14) $(2xy^4)^4$
 $16x^4y^{16}$

15) $(3qp^4)^4$
 $81q^4p^{16}$

16) $(3z^4)^4$
 $81z^{16}$

$$17) (4kh^2j^4)^3$$
$$64k^3h^6j^{12}$$

$$18) (2x^3y^3z^3)^2$$
$$4x^6y^6z^6$$

$$19) (2x^2y^2z^4)^4$$
$$16x^8y^8z^{16}$$

$$20) (4mn^2p^2)^2$$
$$16m^2n^4p^4$$

$$21) (2^2 \cdot (2^3)^2)^2$$
$$2^{16}$$

$$22) 2^4 \cdot 2^4$$
$$2^8$$

$$23) (2a^3)^3 \cdot 2a$$
$$16a^{10}$$

$$24) (2x)^4 \cdot 2x^4$$
$$32x^8$$

$$25) (2p^2 \cdot p^3)^3$$
$$8p^{15}$$

$$26) (r^4 \cdot 2r)^3$$
$$8r^{15}$$

$$27) 2mn^4 \cdot (2m^2n^4)^2$$
$$8m^5n^{12}$$

$$28) (2xy \cdot 2yx^4 \cdot 2xy)^3$$
$$512x^{18}y^9$$

$$29) yx^3 \cdot (2x^2)^3$$
$$8yx^9$$

$$30) (a^3b^3 \cdot (2ba^4)^4)^3$$
$$4096a^{57}b^{21}$$

$$31) 2p^2q^2 \cdot 2m^2p^3 \cdot (m^3p^3q^4)^3$$
$$4p^{14}q^{14}m^{11}$$

$$32) qm^4p^4 \cdot q^4$$
$$q^5m^4p^4$$

$$33) (2p^3q^3)^4 \cdot 2pq^2$$
$$32p^{13}q^{14}$$

$$34) (y^4z^3 \cdot y^2z^4)^4$$
$$y^{24}z^{28}$$