

Algebra 2

Name \_\_\_\_\_ ID: 1

## Properties of Exponents practice #4

**Simplify. Your answer should contain only positive exponents.**

1)  $2v^{-2} \cdot u^4$

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

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

4)  $2y \cdot x^2y^4$

5)  $4x^3 \cdot 3x$

6)  $3yx^4 \cdot 4y^4$

7)  $4u^{-4} \cdot vu^2 \cdot 3u^4v^{-4}$

8)  $4ab^3 \cdot 3a^{-4}b^{-2}$

9)  $2uv^4 \cdot 2u^{-1}v^{-4} \cdot (u^{-4})^3$

10)  $m^{-1}n^2 \cdot (2m^2n^3)^3$

11)  $(yx^4 \cdot 2x^2y^3)^4$

12)  $(x^4 \cdot x^3y^3)^4$

13)  $((2a^4b^{-3})^2 \cdot 2a^{-1}b^3)^{-3}$   
 $(4a^8b^{-6} \cdot 2a^{-1}b^3)^{-3}$   
 $(8a^7b^{-3})^{-3}$   
 $8^{-3} a^{-21} b^9 = \frac{b^9}{512 a^{21}}$

14)  $(2x \cdot 2x^2y^{-4})^{-4}$   
 $(4x^3y^{-4})^{-4}$   
 $4^{-4} x^{-12} y^{16}$   
 $\frac{y^{16}}{256 x^{12}}$

$2^{-2} = \frac{1}{2^2} = \frac{1}{4}$

15)  $(x^3y^2 \cdot 2x^4y^4)^{-2}$   
 $(2x^7y^6)^{-2}$   
 $2^{-2} x^{-14} y^{-12} = \frac{1}{4x^{14}y^{12}}$

16)  $2uv^4 \cdot (v^2)^4$

17)  $\frac{xy^0}{x^2 \cdot 2xy^3}$

18)  $\frac{2xy^{-2}}{4x^4y^{-4}}$   
 $\frac{2x^1y^{-2}}{4x^4y^{-4}} = \frac{1x^{-3}}{2} y^2$   
 $= \frac{y^2}{2x^3}$



$$25) \frac{(ab^{-2})^3}{2a^{-3}b^{-3} \cdot 2a^0b^{-3}} = \frac{a^{\cancel{3} \cdot 3} b^{\cancel{6} \cdot 2}}{4 a^{-3} b^{-6}}$$

$$\frac{a^6}{4}$$

$$26) \frac{m^{-2}n^2 \cdot (2m)^0}{2m^2n^4}$$

$$\frac{m^{-2}n^2}{2m^2n^4}$$

$$\frac{1}{2m^4n^2}$$

$$\frac{1}{2m^4n^2}$$

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**Simplify. Your answer should contain only positive exponents.**

1)  $2v^{-2} \cdot u^4$

$$\frac{2u^4}{v^2}$$

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

$$4y^6x$$

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

$$\frac{24x^5}{y^6}$$

4)  $2y \cdot x^2y^4$

$$2y^5x^2$$

5)  $4x^3 \cdot 3x$

$$12x^4$$

6)  $3yx^4 \cdot 4y^4$

$$12y^5x^4$$

7)  $4u^{-4} \cdot vu^2 \cdot 3u^4v^{-4}$

$$\frac{12u^2}{v^3}$$

8)  $4ab^3 \cdot 3a^{-4}b^{-2}$

$$\frac{12b}{a^3}$$

9)  $2uv^4 \cdot 2u^{-1}v^{-4} \cdot (u^{-4})^3$

$$\frac{4}{u^{12}}$$

10)  $m^{-1}n^2 \cdot (2m^2n^3)^3$

$$8n^{11}m^5$$

$$11) (yx^4 \cdot 2x^2y^3)^4$$
$$16y^{16}x^{24}$$

$$12) (x^4 \cdot x^3y^3)^4$$
$$x^{28}y^{12}$$

$$13) ((2a^4b^{-3})^2 \cdot 2a^{-1}b^3)^{-3}$$
$$\frac{b^9}{512a^{21}}$$

$$14) (2x \cdot 2x^2y^{-4})^{-4}$$
$$\frac{y^{16}}{256x^{12}}$$

$$15) (x^3y^2 \cdot 2x^4y^4)^{-2}$$
$$\frac{1}{4x^{14}y^{12}}$$

$$16) 2uv^4 \cdot (v^2)^4$$
$$2uv^{12}$$

$$17) \frac{xy^0}{x^2 \cdot 2xy^3}$$
$$\frac{1}{2x^2y^3}$$

$$18) \frac{2xy^{-2}}{2x^4 \cdot 2y^{-4}}$$
$$\frac{y^2}{2x^3}$$

$$19) \frac{4u^2v^2 \cdot 3u^{-2}v^3}{4u^4v^0}$$
$$\frac{3v^5}{u^4}$$

$$20) \frac{3x}{3yx^{-3} \cdot 2y^4}$$
$$\frac{x^4}{2y^5}$$

$$21) \frac{x^0y^3 \cdot 3x^{-4}}{2x^{-2}y^4}$$
$$\frac{3}{2x^2y}$$

$$22) \frac{3uv^{-4} \cdot 4u^{-2}v^{-3}}{4uv^0}$$
$$\frac{3}{v^7u^2}$$

$$23) \frac{a^{-2}b^0 \cdot (2a^0)^{-3}}{2a^4b^{-3}}$$
$$\frac{b^3}{16a^6}$$

$$24) \frac{(2m^3)^{-4}}{m^3n^4 \cdot 2mn^{-1}}$$
$$\frac{1}{32m^{16}n^3}$$

$$25) \frac{(ab^{-2})^3}{2a^{-3}b^{-3} \cdot 2a^0b^{-3}}$$
$$\frac{a^6}{4}$$

$$26) \frac{m^{-2}n^2 \cdot (2n)^0}{2m^2n^4}$$
$$\frac{1}{2m^4n^2}$$