

Name: _____ Algebra 10 Unit 6 Lesson 1

Dividing Exponents and Negative Exponents

Simplify.

DO NOW ~ Tuesday 9/10

$$k \cdot 4k^{-1}$$

$$4 \cdot k^0$$



Classwork

$$\frac{1b^{-1}}{-2b^{-2}} = -2b^{-3}$$

$$\frac{1u^3v^{-3}}{-3u^3v^2} = 3 \cdot u^6 \cdot v^{-1} \text{ or } 3u^6v^{-1}$$

$$\frac{1uv^{-4}}{-2u^0} = 2 \cdot u^1 \cdot v^{-4}$$

$$\frac{-2y^{-3}}{-4x^0} = 8 \cdot x^0 \cdot y^{-3}$$

$$\frac{3x^4y^{-3} \cdot -2x^3y^3 \cdot -3xy^0}{-2x^{-2}y^4 \cdot 3x^{-4}y^2} = 18 \cdot x^8 \cdot y^0$$

$$\frac{-2x^{-2}y^4 \cdot 3x^{-4}y^2}{-2x^{-2}y^4 \cdot 3x^{-4}y^2} = 6 \cdot x^{-6} \cdot y^6$$

DO NOW ~ Wednesday 9/11

Simplify.

$$\frac{9xy^2}{9x^5y^2}$$

$$81x^6y^4$$



Classwork

When we **MULTIPLY** exponents with like bases, we **ADD** them.

When we **DIVIDE** exponents with like bases, we Subtract them.

Simplify.

$$5^4$$

$$\frac{5^7}{5^3}$$

$$\frac{5 \cdot \cancel{5} \cdot \cancel{5} \cdot \cancel{5} \cdot 5 \cdot 5 \cdot 5}{\cancel{5} \cdot \cancel{5} \cdot \cancel{5}}$$

$$\frac{1}{x^6}$$

$$x^{-6}$$

$$\frac{x^4}{x^{10}}$$

$$\frac{\cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot 1}{\cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x}}$$

$$\frac{x^3}{y^2}$$

$$\frac{x^4y^8}{xy^{10}}$$

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

$$\frac{4b^3}{4a^{-2}}$$

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

$$-2 - -4$$

$$\frac{4n^{-2}}{3n^{-4}}$$

$$\frac{4n^2}{3} \cdot \frac{4n^2}{4n^2}$$

$$\frac{15x^{10}}{10x^2}$$

$$\frac{3 \cdot x^8}{2}$$

$$x^{-2}$$

$$\frac{16k}{20k^3}$$

$$\frac{4}{5 \cdot x^2}$$

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

$$\frac{18x^4y^2}{3x^8y^5}$$

$$\frac{6}{1 \cdot x^4 \cdot y^3}$$

DO NOW ~ Thursday 9/12

Simplify.

$$\frac{4}{5} \cdot m^0$$

$$\frac{8m^3}{10m^3}$$

$$\frac{4}{5} \cdot 1 = \left(\frac{4}{5}\right)$$



Classwork

Simplify.

$$\left[\frac{12x^3}{9y^8}\right]$$

$$\frac{4x^3}{3y^8}$$

$$\left[\frac{4}{5x^2}\right]$$

$$\frac{8x^3}{10x^5} \cdot \frac{4}{5} \cdot x^{-2}$$

$$\frac{7}{3} \cdot x^{-1} \cdot y^3 \left[\frac{14x^4y^7}{6x^5y^4}\right]$$

$$\frac{7y^3}{3x^1}$$

$$\frac{11}{17} \cdot u^{-3} \left[\frac{11u^4}{17u^7v^9}\right]$$

$$\frac{11}{17 \cdot u^3 \cdot v^9}$$

$$\frac{6}{5} \cdot y \cdot x^{-4} \left[\frac{12yx^4}{10yx^8}\right]$$

$$\left(\frac{6}{5 \cdot x^4}\right)$$

$$\frac{1}{4} \cdot n^0 \left[\frac{5n^8}{20n^8}\right]$$

$$\left(\frac{1}{4}\right)$$

$$\frac{16}{9} \cdot x^{-4} \cdot y^{-1} \left[\frac{16x^4y^4}{9x^8y^2}\right]$$

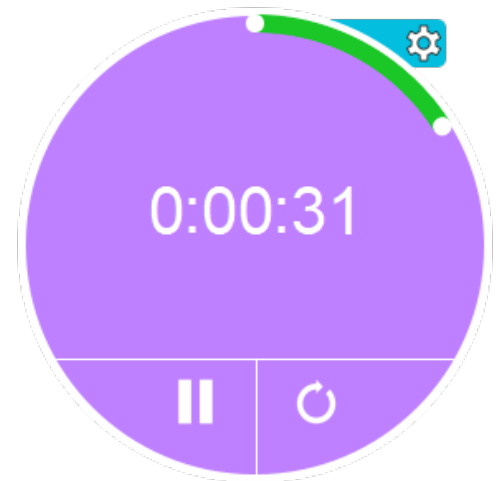
$$\frac{16}{9 \cdot x^4 \cdot y^1}$$

$$\left[\frac{2y^3}{7x^8}\right]$$

$$\frac{2}{7} \cdot y^3$$

To earn your full participation point for the Do Now be sure to have completed all of the following by the time is up:

- 1) Be in your seat
- 2) Take out your calculator
- 3) Have last night's homework out
- 4) Complete the do now



DO NOW ~ Friday 9/13

Simplify.

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

$$1b^{-6} \quad \left(\frac{1}{b^6} \right)$$



Classwork

Simplify.

$$x^1 \cdot y^4 \cdot \frac{x^2 y^5}{xy^1}$$

$$\frac{1}{2} \cdot n^{-5} \cdot \frac{n^{-3}}{2n^2} \quad \frac{1}{2n^5}$$

$$\frac{2}{3} \cdot x^{-6} \cdot \frac{2x^{-4}}{3x^2} \quad \frac{2}{3x^6}$$

$$\frac{1}{2} \cdot x^4 \cdot \frac{4x^7}{8x^3}$$

$$4 \cdot x^{-1} \cdot \frac{4x^2}{x^3 y^{-3}} \cdot \frac{4y^3}{x^1}$$

$$2 \cdot x^5 \cdot y^{-2} \cdot \frac{2yx^2}{x^{-3}y^3} \quad \frac{2x^5}{y^2}$$

$$1 \cdot b^{-2} \cdot \frac{4b^0}{4a^3 b^2} \quad \frac{1}{a^3 b^2}$$

$$\frac{1}{2} \cdot a^{-2} \cdot \frac{ab^{-3}}{2a^3 b^6}$$

$$\frac{1}{2 \cdot a^2 \cdot b^6}$$

Mrs. Ferreri's Station ~ Multiplying and Dividing Exponents

<i>Simplify the following expressions.</i> $\frac{3b^3 \cdot 4a^3b^3}{2a^3}$	$\frac{4x^4y^{-1} \cdot 2x^{-3}y^4}{4y^2}$
$\frac{4u^{-4}}{2u^{-1} \cdot 4u^2v^{-3}}$	$\frac{2y^{-2}}{4x^4y^{-2} \cdot 3xy^3}$
$\frac{3y^0}{2y^2 \cdot 3x^{-4}}$	$\frac{y^{-2} \cdot x^{-3}y^{-1}}{x^0}$
$\frac{3a^{-4}}{2a^4b^0 \cdot 4a^{-4}}$	$\frac{4a^{-2}b^{-1}}{4a^{-3} \cdot 4a^{-2}b^{-3}}$

Continue onto the next page.

<i>Simplify the following expressions.</i> $\frac{4x^2 \cdot 4y^3}{4y^{-4}}$	$\frac{n^0}{4m^4n^2 \cdot 4m^{-4}n^{-1}}$
$\frac{2x^0y^4 \cdot 3x^2y^4}{xy^0}$	$\frac{2x^{-4}y^3 \cdot yx^4}{2xy^3}$
$\frac{y^0}{3x^4y^{-2} \cdot 4x^{-1}y^{-4}}$	$\frac{2u^{-4}v^{-3} \cdot u^{-1}v^3}{v}$
$\frac{2u^2v^4 \cdot 2u^4v^3}{2vu^{-1}}$	$\frac{2a^2b^0 \cdot 2b}{3a^0b^0}$

Computer Station ~ Google Classroom and Delta Math

1) Log into the computer and go to Google Classroom. Join the Algebra 9 class by

entering the code: **u6kkzec**

2) Click on the Delta Math link. Click "Create Account" and then "Student" by entering the teacher code: **654562**

Complete the assignment.

Mrs. Kennedy's Station ~ Dividing Exponents

Simplify. Leave answers with only POSITIVE exponents.

1) $\frac{2g^3b^4}{6g^2b^5}$

7) $\frac{5ch^6}{6c^3h^2}$

2) $\frac{8k}{5k^6}$

8) $\frac{4r}{5r^4}$

3) $\frac{2n^5h^2}{4n^5h^{-2}}$

9) $\frac{5k^3}{2k^2h^4}$

$$\frac{7z^6}{4z^3}$$

$$\frac{6c^{-3}}{5c^6r^{-2}}$$

2) $\frac{5b^2}{3b^3w^6}$

8) $\frac{3k^5w^6}{7k^4w^3}$

Continue onto the next page.

$$\frac{2z^{-6}y^2}{4z^4y^{-5}}$$

$$9) \frac{zn}{4z^{-5}n^{-3}}$$

$$\frac{6b^{-3}}{8b^3}$$

$$10) \frac{3n^4}{2n^{-2}}$$

$$\frac{8k}{7k^5}$$

$$\frac{hn}{6h^2n^3}$$

$$1) \frac{y^3}{3x^2y^2}$$

$$2) \frac{4u^0v^4}{4uv}$$

$$3) \frac{4n^4}{2m^0n^4}$$

$$4) \frac{3x}{2y}$$

Continue onto the next page.

5) $\frac{b^3}{2a^4b^4}$

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

7) $\frac{3a^{-2}b^{-4}}{3a^4b^0}$

8) $\frac{2x^4y^{-3}}{x^{-1}}$

9) $\frac{x^3y^2}{2y}$

10) $\frac{3m^4n^3}{3m^4n^{-4}}$

11) $\frac{x^4y^2}{3x^0y^{-1}}$

12) $\frac{2a^0}{4ba^{-1}}$

13) $\frac{x^0y^0}{3x^3y^2}$

14) $\frac{4x^2y^2}{x^4y^2}$

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

16) $\frac{m^{-1}n^0}{2m^0n^{-3}}$

Continue onto the next page.

$$17) \frac{3y^4}{xy^3}$$

$$18) \frac{2u^4}{3v^3}$$

$$19) \frac{3x^{-3}y^2}{3x^4y^{-1}}$$

$$20) \frac{3xy^2}{4x^2}$$

$$\frac{3x^3y^3}{2y^4}$$

$$16) \frac{4x}{3yx^{-1}}$$

$$\frac{x^0y^3}{4x^{-3}y^4}$$

$$18) \frac{xy^{-2}}{4yx^4}$$

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

$$20) \frac{3x^0y^2}{3x^3y^4}$$

Name: _____ Unit 6 Multiplying Exponents Graded Classwork

Simplify the following expressions. You may keep the negative exponents.

1) $4n^2 \cdot 3n^{-1}$

2) $4x^0 \cdot x^4 \cdot 3x^{-1}$

3) $3v^3 \cdot v^{-1}$

4) $3m^{-4} \cdot 3m^4 \cdot m^{-3}$

5) $3n^2 \cdot 3n^2$

6) $x^3 \cdot 3x^{-3}$

7) $3x \cdot 3x^{-2}$

8) $3v^3 \cdot 2v^0$

9) $n^4 \cdot 4n^{-1}$

10) $2p^3 \cdot 4p^{-1}$

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

12) $3p^4 \cdot 4p^3$

13) $r^0 \cdot 4r^0$

14) $v^2 \cdot v$

15) $4x^{-1} \cdot 2x$

16) $4p^{-3} \cdot 4p^4$

Continue onto the back.

17) $2x^{-2} \cdot 3x^3$

18) $n^{-1} \cdot 3n^3$

19) $3v^2 \cdot 4v^3$

20) $4b^{-3} \cdot 2b^2$

21) $k^{-4} \cdot 4k^0$

22) $4m^{-1} \cdot 2m^3$

23) $4a^2 \cdot a^3$

24) $2n \cdot 2n^{-4}$

25) $4x^2 \cdot 3x^2$

26) $3v^{-3} \cdot 2v$

27) $2m^4$

28) $4m^3 \cdot 2m^4 \cdot 2m^2$

29) $4a^3 \cdot 3a^3$

30) $3x \cdot 2x^4 \cdot 2x^2$

Homework ~ Tuesday 9/10	
<i>Simplify. Make sure there are no negative exponents.</i>	
$2x^2y^3 \cdot 2y^3 \cdot x^4y^4$	$4mn^4 \cdot 2m^0n^3$
$3x^{-1}y^{-3} \cdot 3x^{-4}y^3$	$3ba^4 \cdot 2b^{-4}$

Homework ~ Wednesday 9/11	
<i>Simplify. Make sure there are no negative exponents.</i>	
$\frac{4k^0}{4k^2}$	$\frac{4n^2}{2n^4}$
$\frac{3b^0}{2b^{-3}}$	$\frac{4n^2}{n^4}$

Homework ~ Thursday 9/12	
<i>Simplify. Make sure there are no negative exponents.</i>	
$\frac{2yx^3}{3x^{-2}y^2}$	$\frac{u^4v^3}{u^{-3}}$
$\frac{2b^4}{3ba^4}$	$\frac{3x^4y^{-2}}{2y^3}$