

Name: _____ Algebra 10 Unit 6 Lesson 1

Power of a Power

DO NOW ~ Monday 9/16

Simplify.

$$1 \cdot m^0 \cdot n^7$$

$$1 \cdot 1 \cdot n^7$$

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

$$n^7$$



Classwork

Simplify.

$$8 \cdot x^{12}$$

$$64 \cdot n^3$$

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

$$(2x^4)(2x^4)(2x^4)$$

$$(4n)^3$$

$$(4n)(4n)(4n)$$

$$(4n)^4$$

$$(4n)(4n)(4n)(4n)$$

$$256 \cdot n^4$$

$$(3n^2)^3$$

$$(3n^2)(3n^2)(3n^2)$$

$$27 \cdot n^6$$

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

$$(r^{-1})(r^{-1})(r^{-1})(r^{-1}) \cdot 2r^{-3}$$

$$2 \cdot r^{-7}$$

$$\frac{2}{r^7}$$

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

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

$$16a^{19}$$

$$n^4 \cdot (n^{-3})^4$$

$$(n^4)(n^{-3})(n^{-3})(n^{-3})(n^{-3})$$

$$\frac{1}{n^8}$$

$$n^{-8}$$

$$r^{-3} \cdot (r^{-3})^4$$

$$(r^{-3})(r^{-3})(r^{-3})(r^{-3})(r^{-3})$$

$$r^{-15}$$

$$\frac{1}{r^{15}}$$

DO NOW ~ Tuesday 9/17

Simplify.

$(x^{-4})^2$

$(x^{-4})(x^{-4}) = x^{-8}$

$$\frac{1}{x^8}$$



Classwork

Simplify.

$$(2a^2)^3$$

$$(2a^2)(2a^2)(2a^2)$$

$$8 \cdot a^6$$

$$\frac{256}{m^8}$$

$$256 \cdot m^{-8}$$

$$(4m^{-2})^4$$

$$(4m^{-2})(4m^{-2})(4m^{-2})(4m^{-2})$$

$(3x^{-1})^0$

$$1$$

$$\frac{64}{n^{12}}$$

$$(4n^{-4})^3$$

$$64 \cdot n^{-12}$$

$$(4n^{-4})(4n^{-4})(4n^{-4})$$

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

$$(n^{-3})(n^{-3})(n^{-3})(n^{-3})$$

$$\frac{(2a^0)^2}{2a^4}$$

$$(2a^0)(2a^0)$$

$$\frac{1}{2} \cdot n^{-13}$$

$$\frac{1 \cdot n^{-12}}{2n}$$

$$\frac{1}{2n^{13}}$$

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

$$\frac{4a^0}{2a^4}$$

$$2 \cdot a^{-4}$$

$$\frac{2m^{-2}}{(m^{-2})^4}$$

$$(m^{-2})(m^{-2})(m^{-2})(m^{-2})$$

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

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

$$2 \cdot m^6$$

$$\frac{2m^{-2}}{1 \cdot m^{-8}}$$

$$2 \cdot x^3$$

DO NOW ~ Wednesday 9/18

Simplify.

$$(4p^2)(4p^2)(4p^2)$$

$$64p^6$$



Classwork

Simplify.

$$(2x)^4$$

$$(2x)(2x)(2x)(2x)$$

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

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

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

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

$$\frac{1}{4n^{12}} \cdot \frac{2n^0}{8 \cdot n^{12}} = \frac{1}{4} \cdot n^{-12}$$

$$\frac{(n^{-1})^3}{2n^3}$$

$$(n^{-1})(n^{-1})(n^{-1})$$

$$\frac{1}{2} \cdot n^{-6} = \frac{1 \cdot n^{-3}}{2 \cdot n^3} = \frac{1}{2n^6}$$

$$\frac{(2n^2)^3}{n^3}$$

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

$$\frac{8 \cdot n^6}{1 \cdot n^3} = 8 \cdot n^3$$

$$(2n^4)^4 \cdot 2n^4$$

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

$$32 \cdot n^{20}$$

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

$$(2n^2)(2n^{-3})(2n^{-3})$$

$$\frac{8 \cdot n^{-4}}{1} = \frac{8}{n^4}$$

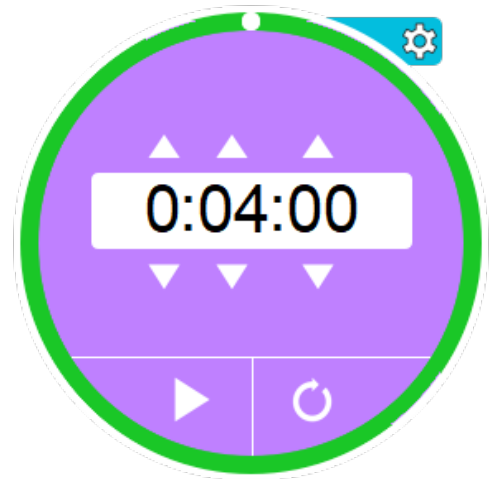
$$x^4 \cdot (2x^2)^4$$

$$(x^4)(2x^2)(2x^2)(2x^2)(2x^2)$$

$$16x^{12}$$

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 ~ Thursday 9/19

Simplify.

$$(4k^2)^4$$

$$(4k^2)(4k^2)(4k^2)(4k^2)$$

$$256 \cdot k^8$$



Classwork

Simplify.

$$(k^{-3})^4$$

$$(k^{-3})(k^{-3})(k^{-3})(k^{-3})$$

$$(4v^{-1})^3$$

$$(4v^{-1})(4v^{-1})(4v^{-1})$$

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

$$\frac{16x^2y^3}{4y^{-4}} =$$

$$4x^2y^7$$

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

$$1 \cdot x^{-1} \cdot y^1$$

$$\frac{2 \cdot x^0 \cdot y^4}{2 \cdot x^1 \cdot y^3} \cdot \frac{1 \cdot y^1}{x^1}$$

$$\frac{(x^3)^2}{2x}$$

$$(x^3)(x^3)$$

$$\frac{1 \cdot x^6}{2 \cdot x^1}$$

$$\frac{1}{2} \cdot x^5$$

$$\frac{2n^3}{(2n^0)^2}$$

$$(2n^0)(2n^0)$$

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

$$\frac{1}{2} \cdot n^3$$

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

$$(1m^2)(1m^4)(1m^4)(1m^4)$$

$$1 \cdot m^{14}$$

$$\frac{2n^3}{(2n^3)^4}$$

$$\frac{2n^3}{16n^{12}}$$

$$\frac{1}{8} \cdot n^{-9}$$

$$\frac{1}{8n^9}$$

Mrs. Ferreri's Station ~ Exponents Foldable*Simplify the following expressions.*

$$(p^{-2})^4 \cdot 2p \cdot 2p$$

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

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

$$\frac{(2x^3)^3}{2x^{-1}}$$

Computer Station ~ Google Classroom and Delta Math

If you were absent follow the directions below to log into 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

Once you are logged into Delta Math, complete the "Dividing Exponents" assignment.

Mrs. Kennedy's Station ~ Power of a Power***Simplify.***

1) $(4n^{-4})^3$

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

3) $(4b^3)^0$

4) $(3x^0)^3$

5) $(4v^{-1})^4$

6) $(a^3)^3$

7) $(3p^2)^4$

8) $(n^{-2})^3$

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

10) $(r^4)^2$

Continue onto the next page.

11) $2a^2 \cdot (2a^3)^4$

12) $(2r)^4 \cdot 2r^{-2}$

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

14) $2n^4 \cdot (2n^{-3})^3$

15) $x^2 \cdot (2x^0)^2$

16) $2x^4 \cdot (x^2)^2 \cdot 2x$

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

22) $\frac{(2a^4)^3}{2a^0}$

$$\frac{2x^0}{(2x^4)^2}$$

24) $\frac{2a}{(a^{-3})^4}$

Continue onto the next page.

17) $(2k^3)^3 \cdot k^3 \cdot 2k^3$

18) $2x^{-2} \cdot x^3 \cdot (2x)^3$

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

20) $(x^4)^3 \cdot x^2$

27) $\frac{2x^2}{(x^{-2})^2}$

28) $\frac{2r^3}{r^4}$

29) $\frac{2p^4}{(p^4)^3}$

30) $\frac{2a}{(2a^3)^3}$

$$\frac{(2x^{-2})^3}{2x}$$

26) $\frac{(b^4)^0}{2b^{-4}}$

Independent Station ~ Multiplying Exponents with the Same Base

Simplify the problems on the left. Find the answers on the right. Be sure to write the correct letter next to the problem on the left.

Simplify.

1. $2x^2y^3 \cdot yx^0$
2. $4yx^2 \cdot 9xy^2$
3. $8xy^3 \cdot 8xy^4$
4. $9x^5y^0 \cdot y^4 \cdot 2x^2$
5. $6y^2 \cdot 5xy^3$
6. $7yx^3 \cdot xy^2$
7. $4y^0 \cdot x^2y^2 \cdot 2x^4y^3$
8. $6x^4y^2 \cdot 6x^3$
9. $8x^2y^2 \cdot 2yx^5$
10. $y^2 \cdot 6x^0y^3 \cdot x^3y^3$
11. $6yx^3 \cdot 3xy^2 \cdot 4yx^3$
12. $6xy^5 \cdot 6x^3$
13. $7x^3y^3 \cdot xy^2$
14. $y^4 \cdot 2xy^2 \cdot 3x^3y^2$
15. $8x^2 \cdot 4y^4$

- | | | | |
|---|------------|---|------------|
| N | $16x^7y^3$ | I | $72x^7y^4$ |
| C | $8x^6y^5$ | W | $18x^{10}$ |
| F | $16x^2y^6$ | D | $13x^7y^4$ |
| E | $64x^2y^7$ | A | $6x^4y^8$ |
| X | $6x^8$ | H | $36x^3y^3$ |
| O | $18x^7y^4$ | U | $2x^2y^3$ |
| N | $10x^7y^3$ | T | $2x^2y^4$ |
| E | $32x^2y^4$ | H | $6x^3y^8$ |
| U | $9x^4y^5$ | C | $36x^4y^5$ |
| E | $7x^4y^3$ | A | $11y^5x$ |
| S | $12x^6$ | T | $36x^7y^2$ |
| V | $36x^3y^5$ | K | $30y^5x$ |
| T | $7x^4y^5$ | K | $13x^3y^3$ |

You may use a white board for the next section.

Evaluate each expression on the right using $x = 2$ and $y = 3$ to find the hidden message below.

Why did the Zombie cross the road?

27,216	186,624	18,342	3,024	629,856	648	134,784	41,472	314,928	559,872	5346	139,968	7776	746,496	124,416	14,580	10,368	55,296

Homework ~ Monday 9/16	
<i>Simplify.</i> $4n^2 \cdot 4mn$	$\frac{2b^{-2}}{4b^2}$
$(3r)^4$	$(n^2)^4 \cdot 2n^{-2}$
Homework ~ Tuesday 9/17	
<i>Simplify.</i> $3ba^{-2} \cdot a^3b^{-2}$	$\frac{2x^{-1}}{2x^{-4}}$
$(x^2)^4$	$r^{-3} \cdot (2r^{-3})^4$

Homework ~ Wednesday 9/18

Simplify.

$$3n^4 \cdot 3m^{-3}n^2$$

$$\frac{3a^0}{4a^{-3}}$$

$$(4x^4)^3$$

$$b^{-4} \cdot (2b^4)^4$$

Homework ~ Thursday 9/10

Simplify.

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

$$\frac{(b^4)^0}{2b^{-4}}$$

$$(2x)^3$$

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

