

Welcome Back MYP Math 9!

	Assignment Effort Grade (Circle One)	Comments (What was interesting or challenging?)
Monday Date: <u>2 - 5</u> Topic: <u>2B: Indices (Zero and Negative Exponents)</u>	0 1 2	
Tuesday Date: <u>2 - 6</u> Topic: <u>Study Guide, Criterion C</u>	0 1 2	
Wednesday Date: _____ Topic: _____	0 1 2	
Thursday Date: _____ Topic: _____	0 1 2	
Friday Date: _____ Topic: _____	0 1 2	

Class Plan:

1. Trashketball!

2. Work time:

Study guide of Index Laws

Unit 5: Exponentials

Warm-up:

Think of a team name for your table.



Trashketball

Table 1

AK
~~||||~~ ||

Table 2

Omar & PBs
||

Table 3

ILD
~~||||~~ ||||

Table 4

Table 5

Table 6

Trashketball

1. Work together to put 1 solution on your board, **wait** to hold it up until told.
2. Table correct? **1 point.**
3. Every 2 points, a person from the **table** gets to shoot for 1, 2 or 3 bonus points
4. Teacher is the judge - if you are taking too long - or losing focus - you lose your shot :) Stay on your game!



Product Property of Exponents

$$a^m \cdot a^n = a^{m+n}$$

Quotient Property of Exponents

$$\frac{a^m}{a^n} = a^{m-n}$$

Definition of Negative Exponents

$$a^{-n} = \frac{1}{a^n} \quad \text{or} \quad \left(\frac{a}{b}\right)^{-n} = \left(\frac{b}{a}\right)^n$$

Zero Exponents

$$a^0 = 1$$

Power of a Power Property

$$(a^m)^n = a^{mn}$$

Power of a Product Property

$$(ab)^m = a^m b^m$$

Power of a Quotient Property

$$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$$

*****Important:**

Recognize how connected the properties are.

Simplify. Your answer should contain only positive exponents.

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$$1) (-3)^1 \cdot (-3)^4 = (-3)^5 \neq -3^5$$
$$= -243$$

Simplify. Your answer should contain only positive exponents.

$$2) \ 3n^2 \cdot -2n^2 = -6n^4$$

Simplify. Your answer should contain only positive exponents.

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

Simplify. Your answer should contain only positive exponents.

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

$$= x^{12}$$

Simplify. Your answer should contain only positive exponents.

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

Simplify. Your answer should contain only positive exponents.

$$6) 2r^{-4} \cdot -3r^1 = -6r^{-3}$$

$$\frac{2 \cdot -3}{\cancel{r \cdot r \cdot r \cdot r}}$$

$$= \boxed{\frac{-6}{r^3}}$$

Simplify. Your answer should contain only positive exponents.

$$7) \frac{2x^4}{x^2}$$

Simplify. Your answer should contain only positive exponents.

$$8) -4n^0 \cdot n^{-3}$$

Simplify. Your answer should contain only positive exponents.

$$9) \cancel{b^0} \cdot -4b^{-1} = \frac{-4}{b}$$

Simplify. Your answer should contain only positive exponents.

$$10) (2y)^2$$

$$= 4y^2$$

Simplify. Your answer should contain only positive exponents.

$$11) (3u^4v^0)^2$$

Simplify. Your answer should contain only positive exponents.

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

Simplify. Your answer should contain only positive exponents.

$$13) 4x^{-1} \cdot -\cancel{x}^4 \cdot 4x^2 = -16x^5$$

Simplify. Your answer should contain only positive exponents.

$$14) \frac{(2n^2)^4}{2n^{-1}}$$

Exercises:

- 1) Finish handout
- 2) Finish study guide

DUE! Friday start of class

Solutions

- | | | | |
|-------------------|---------------------|------------|------------------------|
| 1) $(-3)^5$ | 2) $-6n^4$ | 3) 4^6 | 4) x^{12} |
| 5) 3^2 | 6) $-\frac{6}{r^3}$ | 7) $2x^2$ | 8) $-\frac{4}{n^3}$ |
| 9) $-\frac{4}{b}$ | 10) $4y^2$ | 11) $9u^8$ | 12) $\frac{1}{(-2)^2}$ |
| 13) $-16x^5$ | 14) $8n^9$ | | |