

Name: _____ Due in the A bins by 8:30am on Tuesday, March 19

Algebra I Notes: Section 6.4 Title: _____

Objective

SWBAT simplify expressions containing integer exponents.

Review

Simplify the following expressions.

1. $2k^4 \cdot 4k^5$

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

3. $\frac{6m^4n^3p^3}{3m^2n^2p}$

Notes

Expand, then simplify the expression. Try to write the property for each exponent rule.

Expand and Simplify the expression

1)

$$\frac{h^4}{h^4}$$

Zero
Exponents

Exponent Property

$$x^0 =$$

A. $y^{-4}x^2y^4$

B. $(x^4y^2z^0)^3$

2)

$$\frac{q^2}{q^3}$$

Negative
Exponents

$$x^{-a} =$$

A. $\frac{2^5}{2^7}$

B. $3y(2x^{-3}y)^2$

Examples

A. Complete Problem 9 from page 522.

a.	b.	c.	d.
e.	f.	g.	h.
i.	j.	k.	l.

B. Apply the basic rules to find the value of each variable. Prove your results.

1. $2^5 \cdot 2^{-3} = 2^a$

2. $2^5 \cdot 2^{-7} = 2^b$

3. $\frac{2^5}{2^7} = 2^c$

4. $\frac{2^5}{2^{-7}} = 2^d$

5. $\frac{2^5}{2^c} = 2^8$

C. What is the value of w in each equation? (**Hint: You need the same base on both sides of the equals sign like the problems in Part B.)

1. $3^{2w} = 81$

2. $5^{w-3} = 125$

3. $\frac{2^w}{2^2} = 4$

4. $\frac{5^5}{5^w} = 25$

5. $(4x^2)^w = 64x^6$

6. $(7x^2)(2x) = 14x^w$

Summary

A zero exponent means _____ and always equals _____.

An exponent of one means _____ and always equals _____.

Section 6.4 Question order: 1,2,3,6,7,9,10,11,4,8,12,13,5

These will be done in class tomorrow, but you may start them tonight if you want to get a head start. Please complete all questions on a separate sheet of graph paper.

Also, please answer the following questions to the best of your ability:

1. Copy the title of the Section from the book onto the header of this sheet. Explain how you think the objective relates to the title of Section 6.4.
2. Is $3^0 = 4^0$? Why or why not? Please explain why in words or by using the rules on the top of page 517.
3. Is $3^{-1} < 4^{-1}$? Why or why not? Please explain why in words, or explain by rewriting both expressions using the definitions on page 519 to help.

THIS SPACE BELOW IS TO WRITE ANY OTHER QUESTIONS YOU HAVE AS YOU ARE COMPLETING THIS SHEET. You will be graded on the quality of these questions.