

Name: _____

Date: _____

6.1 Properties of Exponents

Essential Question: _____

Zero Exponent

Words: For any _____ number a , _____. The power ____ is _____.

Numbers: _____

Algebra: _____

Negative Exponents

Words: For any integer ____ and any nonzero number a , _____ is the reciprocal of _____.

Numbers: _____

Algebra: _____

EXAMPLE 1

Using Zero and Negative Exponents

Evaluate each expression.

Copy down the examples and solutions here:

EXAMPLE 2

Simplifying an Expression

Simplify the expression $\frac{4x^0}{y^{-3}}$. Write your answer using only positive exponents.

Make sure to copy down all examples in this section and their solutions (example f, g and h).

Evaluate the expression.

1. $(-9)^0$

2. 3^{-3}

3. $\frac{-5^0}{2^{-2}}$

4. Simplify the expression $\frac{3^{-2}x^{-5}}{y^0}$. Write your answer using only positive exponents.

Product of Powers Property

Let a be a real number, and let m and n be integers.

Words: To _____ powers with the same base, _____ their exponents.

Numbers: _____ Algebra: _____

Quotient of Powers Property

Let a be a nonzero real number, and let m and n be _____.

Words: To _____ powers with the same base, _____ their exponents.

Numbers: _____ Algebra: _____

Power of a Power Property

Let a be a real number, and let m and n be integers.

Words: To find a power of a _____, _____ the exponents.

Numbers: _____ Algebra: _____

EXAMPLE 3

Using Properties of Exponents

Simplify each expression. Write your answer using only positive exponents.

Copy down the examples and solutions here: