DIGITAL

NAME

DATE

Module 11 Simplifying Algebraic Expressions
with Polynomials
Lesson 1 Applying Rules of Exponents

*guided
notes*

Lesson Objectives

- Apply the *multiplication rule for exponents*.
- Apply the *division rule for exponents*.
- Apply the *definition of negative exponents*.
- Apply the *power-of-a-power rule*.
- Apply the *power-of-a-product rule*.
- Apply the *power-of-a-quotient rule*.

The rules for exponents are used to _____ exponential

expressions.

Multiplication rule for exponents:

$a^m \cdot a^n =$ _____

$a \neq 0$

To use the *multiplication rule for exponents* the bases must be the same. If not,

the expression _____.

Division rule for exponents:

$\dfrac{a^m}{a^n} =$ _____

$a \neq 0$

Definition of negative exponents:

For a nonzero number a and a positive integer n, _____.

1 ▸ Simplify: $4^3 \cdot 4$

_____

2 ▸ Simplify: $\dfrac{6^2}{6^5}$

_____

© 2003 BestQuest

Power-of-a-power rule:

$(a^m)^n = $ _____

$a \neq 0$

Power-of-a-product rule:

$(ab)^m = $ _____

$a \neq 0,\ b \neq 0$

Power-of-a-quotient rule:

$\left(\dfrac{a}{b}\right)^m = $ _____

$a \neq 0,\ b \neq 0$

3 ▶ Simplify: $(4^3)^0$

_____

4 ▶ Simplify: $(3y^3)^2$

_____

5 ▶ Simplify: $\left(\dfrac{4}{x}\right)^3$

_____

410-467-3300