Algebra

Unit 6: Exponents and Exponential Functions

Study Guide

The test is worth 80 points.

1. Use the following properties to decide if one expression is equivalent to another.

**Product of Powers** **Power of a Power**  **Power of a Product**

**Quotient of Powers Power of a Fraction Negative Exponent Zero Exponent**

**Examples** A. Does x5 ● x9 = x45 Why or why not?

1. Does (x5)9 = x45 Why or why not?
2. Does 2-3 = -8? Why or why not?
3. Does -52 = (-5)2 Why or why not?

E. Does (3m3)2 = 9m6 Why or why not?

1. Write an expression for volume in a box.

**Example**: Write a simplified expression for the volume of a box that has length 4x2y, width 3xz, and height 2y3z2.

Additional Practice: pg303 #11-12

1. Simplify algebraic expressions using properties of exponents.

**Examples**: A. (2n3)(3n8) B. 2-5● 29 C. 

D.  E.  F. 

Additional Practice: pg296 #5-32

1. Graph exponential increase and decrease.

**Examples**: Graph each function on a coordinate grid.

A. y = 2x B. y = (1/2)x

Additional Practice: pg310 #25-30

1. Use the General Growth Formula A=P(1 + r)t to solve problems involving exponential increase and decrease.

**Examples**: A. Destiny has $2000 in a savings account that pays a 4.5% annual

interest rate. Find the amount of money that will be in her account

after 7 years at this rate.

B. The value of Spencer’s speedboat is depreciating at a rate of 3% per

year. If the boat is worth $12,000 now, how much will it be worth

5 years from now?

Additional Practice: pg319 #13-16, 27-29