

Name \_\_\_\_\_

Date \_\_\_\_\_

Advanced Algebra

**Unit 3- Exponential, Power, and Logarithmic Functions**

Students should come into this unit with

- a) Knowledge of how to use the rules for calculating with exponents accurately
- b) Knowledge of how to solve simple growth and decay problems
- c) How to write exponential equations from tables and graphs

LT: I can simplify exponents using exponent rules. **Home work: You need to study your exponent rules. These can be found on page 246.**

Re-write the following expressions without using a negative exponent or a decimal point.

1)  $5^{-3}$

2)  $(2x3)^0$

3)  $(5x^2)^3$

4)  $3^{1/4} * 3^{3/4}$

5)  $4^{1/3} * 16^{1/3}$

6)  $20^{1/4} * (4/5)^{1/4}$

7)  $2^3 * 2^5$

8)  $(-3)^2 * (-3)^1$

9)  $(1/2)^2 * (1/2)^{-2}$

10)  $3 * (2/3)^3 * (3/2)^2$

11)  $3 * (2/3)^3 * (3/2)^2$

12)  $x^4 * x^{-2}$

13)  $3y^2 * y^2$

14)  $(4^3)^2$

15)  $(6^2)^{-2}$

**LT: I can use exponential equations to model real life situations.**

**Write a recursive or a direct (explicit) formula for the following problems)**

**Sketch a graph for the following as well and state the domain and range.**

The car that Jason bought is expected to depreciate 18% each year. Jason paid \$17,500 for his car. How much would his car be worth 3 years after he bought it?

Sally made a deposit in the bank of \$1,200. She will earn 8% annual interest. She leaves it in the bank making no other withdrawals or deposits. How much will her account be worth in 5 years?

James deposits \$500 into an account that pays 6.75% annual interest. How long will it take for his money to double?