

Exponential Functions Practice Test

Name: _____ period _____

- 1.) The Highland Ranch open space contains a virus that is killing the field mice at a rate of 25% each year. The Park Rangers estimated that there were 28,000 mice before the outbreak of this virus. Write an equation to represent this situation.

In how many years will the mouse population be under 1000 mice?

- 2.) The ticket prices at Six Flags Amusement Park have increased annually according to the following table. Write an equation that represents the table.

Year	0	1	2	3
Price (\$)	60	61.80	63.65	65.56

If the ticket prices continue to grow at the same rate, what is the ticket price in 6 years?

- 3.) An investment of \$2500 earns 3% annual interest, compounded monthly. Write an equation to represent this situation.

Find the value of your investment at 4 years.

- 4.) Jorge has some dimes and quarters. He has a total of 18 coins and the collection of coins is worth \$2.40. How many dimes and quarters does Jorge have?

Don't Forget to: Define your variables, write two equations, show your work, and put your final answer in a sentence.

5.) Consider the two points (3, 15) and (8, 6).

a. Use an algebraic method to write the equation of a line passing through points (3,15) and (8,6).

b. Write the equation of an exponential function passing through points (3,15) and (8,6).

6.) Write each expression below as a simplified expression without negative exponents.

$$\frac{x^{10}y^2}{(x^3)^{-2}y^3y^4}$$

$$\frac{a^{-10}b^6}{(a^4)^2b^8}$$

$$\left(\frac{3}{7x}\right)^{-3}$$

$$\left(\frac{w}{4}\right)^{-1}$$

7.) Write each expression below in radical form and compute the value without using a calculator. Show necessary work.

$$-1000^{1/3}$$

$$27^{2/3}$$

$$9^{3/2}$$