

Name: _____

Date: _____

Homework: Exp/Log Equations w/ Word Problems

For #s 1 – 3, use the information given in the following table. $pH = -\log[H^+]$

Item	pH	$[H^+]$
Apple Sauce	3.5	
Lime Juice		6.3×10^{-3}
Pineapple	3.9	1.3×10^{-4}
Spinach	6.3	5.01×10^{-7}

- What is the concentration of hydrogen ions in apple sauce?
- What is the pH of lime juice?
- Which of the four foods given in the table is the most acidic? How do you know?
- A initial population of 520 chinchillas is given by the equation: $y = 520(1.32)^x$. How many years will it take for there to be 1000 chinchillas?
- The population of Sri Lankan elephants is decreasing! In 2000, there were 6000 elephants, and now, in 2014, there are only around 2,450. (*hint: use the calc, & let x = the number of years after 2000*)
 - Write an exponential equation representing the number of Sri Lankan elephants over time.
 - Using the equation you wrote in part a, determine during what year the Sri Lankan elephant population will reach 1000.
- A classic car, originally bought for \$5000, is increasing in value at a rate of 8.5% per year. Write an equation representing the car's worth over time. Then use it to find out how long it will take for the car to be worth double it's original price.

7. Suppose you invest \$5000 in an account earning 6.9%, compounded monthly. After how many years will the investment be worth \$7500?
8. If you put \$100 into an account for 10 years, what interest rate would get you a total of \$250?
9. An investment of \$5000 is now valued at \$10,200. The interest rate is 4.8%, compounded continuously. About how long has the money been invested?
10. You want to save \$500 for a new iPad in 2 years. If you have \$250 now, what interest rate would you need to get in order to buy the iPad, assuming your interest is compounded continuously?