

Name: _____ Date: _____

Exponential Word Problems

- 1) If you invest \$1,000 at an annual interest rate of 5% calculate the final amount you will have after:
 - a. 7 years
 - b. 10 years
 - c. 2 years

- 2) When you were born, your parents invested \$2,000 in a college savings plan with an annual interest rate of 13%, calculate the final amount you will have in the account by time you go to college at 18 years old.

- 3) A used car was purchased for \$12,329 this year. Each year the car's value decreases 8.5%. How much will the car be worth after 10 years?

- 4) A funny video about a cat making weird noises is being spread around the school. Originally only 4 people had seen it but the rate of people that has seen it is tripling every hour. How many people will have seen the video in 6 hours?

- 5) Jeremiah owns a business. His first year he made \$11,212 each of the following years his profit increased 12%. How much money did Jeremiah earn after 11 years?

- 6) Dianna just bought a home. She paid \$240,000. She is able to pay 20% of the loan off each year. How much will she owe in 18 years?

- 7) A radioactive material decays at a rate of 40% per hour. We start with 80 grams of the substance. How much will remain after 4 hours?
- 8) Scientists have discovered a new bacteria that is rapidly spreading. The original sample that is being studied contained 5 bacteria and they are doubling every hour. How many bacteria will there be after one day? (yes, it will be a huge number)
- 9) You buy a commemorative coin for \$110. Each year the value increases by 4%.
A) Find the value of the coin after 6 years.

B) How long will it take for the coin to double in value?
- 10) In 2000 the federal debt of the US was \$5.67 **TRILLION**. Since then the debt has been increasing at a rate of about 8.5% per year. About how much is the federal debt now? (yes- this is true AND SCARY!)
- 11) You buy a laptop for \$780. Each year the value of the laptop decreases by 5%.
A) Find the value of the laptop after 4 years.

B) You plan to get rid of the laptop after its worth falls below \$400. When will that be?