

Exponential Growth and Decay Quiz Review

Name _____

(Round all money answers to the nearest cent)

1. You deposit \$1,400 in an account that pays 3% interest compounded annually. Find the balance after 5 years.

2. You deposit \$9,000 in an account that pays 5.3% interest compounded annually. Find the balance after 8 years.

3. You deposit \$700 in an account that pays 6.25% interest compounded annually. Find the balance after 10 years.

4. **Money Choices** Which option gives the greater ending balance? (circle your answer)

A. Depositing \$825 in an account that pays 7% compounded annually for 6 years.

B. Depositing \$750 in an account that pays 8.25% compounded annually for 6 years.

For problems 5-7, write an exponential growth model. (Don't solve; just write the equation)

5. A business had a \$60,000 profit in 2000. Then the profit increased by 13% per year for the next 9 years. _____

6. A. A town had a population of 9,200 in 1990. Then the population increased by 6.5% per year for the next 5 years. _____
B. Use Desmos to make a graph of this model. Show Mr. S when you are finished.

7. You memorized 50 German vocabulary words. Then you memorized 30% more words each week for the next 15 weeks. _____

Exponential Growth and Decay Quiz Review

8. You bought a car for \$15,900. It will depreciate at a rate of 10.5% annually. Find the value of your car after 5 years. _____
9. You bought a car for \$4,000. It will depreciate at a rate of 9% annually. Find the value of your car after 7 years. _____
10. A. You bought a car for \$20,850. It will depreciate at a rate of 11.25% annually. Find the value of your car after 8 years.

- B. Use Desmos to make a graph of this model. Show Mr. S when you are finished.
11. Between 2005 and 2015 the population of a city decreased by about 1% per year. In 2005 the population was 340,000. Write an exponential decay model for this problem. _____ Use this model to calculate the estimated population in 2020.

SCIENCE CONNECTION

12. The concentration of medication in a person's bloodstream decreases by 25% each hour. Calculate amount of medication in person's bloodstream after 5 hours if they took an initial dose of 750 mg. _____

For problems 13 and 14, classify the model as exponential growth or decay AND identify the % of growth or decay.

13. $y = 11,200(1.07)^t$ Growth or Decay (circle one) % = _____
14. $y = 6,000(0.94)^t$ Growth or Decay (circle one) % = _____