

1. Determine whether the function show exponential growth or decay. Then identify the **initial amount** and the percent of **increase or decrease**.

a. $y = 120(0.85)^t$

b. $y = 275(1.35)^t$

c. $y = 750(0.95)^t$

d. $y = 1520(0.76)^t$

e. $y = 2550(1.02)^t$

f. $y = 430(1.12)^t$

2. A computer was purchased for \$899.00 in 2004. If computers depreciate at a rate of 23% per year, then how much is it worth in the year 2010?

3. Kim purchases a new Mustang GT for \$31,500.00.

- What is the purchase price with tax included? (Michigan sales tax is 6%)
- Automobiles **depreciate** at an average rate of 18% per year. If a brand new Mustang GT is purchased for \$31,500.00, how much is it worth after 6 years?
- If a Classic 1970 Mustang **appreciates** at a rate of 5% per year, how much is it worth **today** (40 years later) if it was purchased for \$5,300 in 1970?
- Are automobiles good or bad investments? Explain.(Please write neatly and grammatically correct!)

4. A population of ladybugs rapidly multiplies so that the population t days from now is given by

$$A(t) = 3000(3)^t$$

- How many ladybugs are present now?
- How many are there after 3 days?
- How many are there after a week?

5. State the amount of money Scott would have if he invested \$7500 at 8.5% annual interest for **five** years if it was **compounded**:

- a. annually b. weekly c. quarterly d. daily e. Continuously

6. If you had \$10,000 to invest which plan would you choose and why? Show work to support your answer.

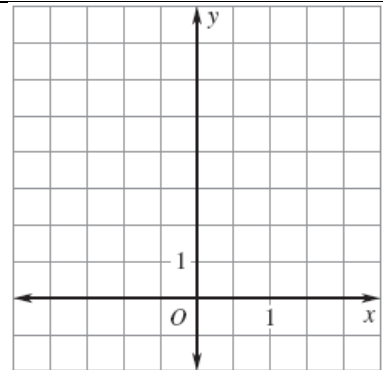
Plan A: 12% compounded annually for 3 years

Plan B: 11.5% compounded monthly for 3 years

7. $y = 2\left(\frac{1}{4}\right)^{x-2} - 1$ **Be sure to label the transformed point!!!!!!**

Domain _____ Range _____

Horizontal Asymptote: _____



8. $y = (5)^{x+3} + 4$ **Be sure to label the transformed point!!!!!!**

Domain _____ Range _____

Horizontal Asymptote: _____

