Name: _____ Date: _____

Exponential Growth and Decay Practice

$$Growth: y = P(1+r)^t \qquad Decay: y = P(1-r)^t$$

$$\text{Compound Interest}: A = P\left(1-\frac{r}{n}\right)^{nt}$$

1. You deposit $1500 in an account that pays 5% interest compounded yearly. Find the balance after 6 years.

2. The mice population is 25,000 and is decreasing by 20% each year. Write a model for this situation. What will be the mice population after 3 years?

3. The number of mosquitoes at the beach has tripled every year since 1999. In 1999, there were 2,500 mosquitoes. Write a model for this situation. How many mosquitoes would you predict were at the beach in 2005?

4. Corey invested $1500 when he was a freshman in order to save for college. If he chooses to invest it in an account that earns 3.5% interest and is compounded annually, how much money will he have after 4 years?

5. I bought a car for $25,000, but its value is depreciating at a rate of 10% per year. How much will my car be worth after 8 years?