

GSE Algebra

Unit 4 Exponential Equations

Practice

Name: _____ Date: _____

Exponential Growth and Decay Practice

$$\text{Growth: } y = P(1+r)^t$$

$$\text{Decay: } y = P(1-r)^t$$

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

$$1500(1+0.05)^6 = \boxed{2,010.14}$$

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?

$$25000(1-0.20)^t = \underbrace{25000(.8)^3}_{\boxed{12800}}$$

3. Given the exponential model $y = 200(.80)^x$, tell whether the model represents exponential growth or decay. Then, tell what the growth/decay factor is and the growth/decay percent.

decay / .80 factor / 20%

4. I bought a car for \$25,000, but its value is depreciating at a rate of 10% per year.

A. How much will the car be worth after 8 years?

$$25000(1-0.10)^8 = \boxed{10761.48}$$

B. When will the car be worth half of its value?

~ 7 years