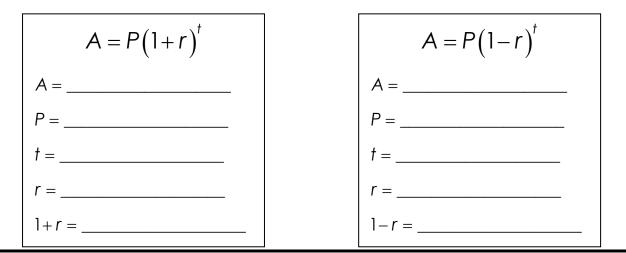
## Algebra I

Name: \_\_\_\_

Date:

## **Exponential Growth and Decay – Applications**

## **Exponential Models**



- 1. In 1990, the cost of tuition at a state university was \$4300. During the next 8 years, the tuition rose 4% each year.
- a. Growth or decay? What is the \_\_\_\_\_ factor?
- b. Write a model the gives the tuition y (in dollars) t years after 1990.
- c. How much would it cost to attend college in 2000? In 2007?
- d. How long it will take for tuition to reach \$6000?
- 2. A 2011 Kia Sorrento depreciates at a rate of 33.6% per year. The car was bought for \$32,000.
- a. Growth of decay? What is the \_\_\_\_\_\_ factor?
- b. Write a model the gives the value of the cary (in dollars) tyears after 2011.
- c. How much is the car worth now? In 2012?
- d. How long will it take for the car to be worth half?

$A = P\left(1 + \frac{r}{n}\right)^{nt}$	COMPOUND INTEREST:	
	Compounded:	n
A =	Annually	
P =	Semi-Annually	
	Quarterly	
t =	Monthly	
	Weekly	
r =	Daily	
n =		

- 3. You invest your \$1000 graduation money. A bank is offering a 4% interest rate. Calculate how much money you have after 10 years if the bank compounds:
  - a. Annually
  - b. Semi-Annually
  - c. Quarterly
  - d. Monthly
  - e. Weekly