

Name:	Date:
Topic:	Class:

Main Ideas / Questions	Notes/ Examples		
Convert percentage to rate	P = _____ Formula R = _____		
Interpretations	Decrease	Remain	Increase
Examples	Directions: Write each of the multipliers for the given percentages		
	1. 17% increase _____ 12% decrease ____ 2. 3% growth _____ 34.3% depreciation ____ 3. 18.5% remainder _____ 57.05% decline _____		
Directions: Select the best description of the following exponential equations.			
1. $f(x) = 34(5.75)^x$ ☐ Growing by 475% with every unit of x . ☐ Decaying by 575% with every unit of x . ☐ Decaying by 475% with every unit of x . ☐ Growing by 575% with every unit of x .	2. $f(x) = 50(1.74)^x$ ☐ Growing by 174% with every unit of x . ☐ Growing by 74% with every unit of x . ☐ Decaying by 174% with every unit of x . ☐ Decaying by 74% with every unit of x .		
3. $f(x) = 87(0.49)^x$ ☐ Decaying by 51% with every unit of x . ☐ Decaying by 49% with every unit of x . ☐ Growing by 49% with every unit of x . ☐ Growing by 51% with every unit of x .	4. $f(x) = 26(0.29)^x$ ☐ Decaying by 71% with every unit of x . ☐ Decaying by 29% with every unit of x . ☐ Growing by 71% with every unit of x . ☐ Growing by 29% with every unit of x .		

Directions: Complete the following problems

5. Lisa wants to buy a car with her money, which costs \$14,259. When she drives the car off of the lot, it begins to depreciate by 14%.

- a. What percent of the value of the car remains? (determine the multiplier)
- b. Write an equation that model the situation above $y = \underline{\hspace{2cm}}$
- c. How much will the car be worth after 6 years?
- d. When will the car be worth under \$1000?

6. John bought a collector's edition car that cost \$42,950. He drives it off the lot and it appreciates value by 9% each year.

- a. What percent of the value of the car remains?
- b. Write an equation that models the situation above. $y = \underline{\hspace{2cm}}$
- c. How much will the car be worth after 4 years?
- d. When will the car be worth fewer than \$120,000?

7. A major technology company, ExpoGrow, is growing incredibly fast. The latest prospectus (a report on the company) said that so far, the number of employees, y , could be modeled with the equation $y = 3(4)^x$, where x represents the number of years since the company was founded. How many people founded the company? How can the growth of this company be described?

8. As part of a major scandal, it was discovered that several statements in the ExpoGrow prospectus were false. If the company actually had five founders and doubles in size each year, what equation should have been printed in its report?