MBF 3C1 Name: _____

Solving Problems with Exponential Relations

Example 1

To determine the equation of an exponential relationship given a rate of growth or decay as a percentage:

	a. A principal of $500 is invested at 8% per year, compounded annually. Write an exponential equation to represent the relationship.	b. A new car costs $20 000. It's value decreases 16% per year after it is purchased. Write an exponential equation to represent the relationship.
1. Start with the generalization for an exponential relation.		
2. Sub in the initial amount, __.		
3. Sub in the common ratio, __. ★ for special words: • double use _____, • for half-life use _____, • for triple use _____, etc ★ for Percent: • convert the percent to a decimal • for growth, _____ • for decay, _____		

Example 2

The population of Alberta between 1987 and 2005 can be modelled by an exponential equation. The population in 1987 was 2.4 million and the growth rate was 1.7%.

a. Write an equation to model the situation.

b. Use your model to calculate the population in 1985.

c. Use your model to calculate the population in 2012.