Section 5.1b Exponential Functions

# Objective 4: Solving Applications of Exponential Functions

The **Periodic Compound Interest Formula** is, where *A* is the total amount in the account after *t* years, *P* is the principal (original investment amount), *r* is the annual interest rate as a decimal, and *n* is the number of times interest is compounded per year.

The **Continuous Compound Interest Formula** is, where *A* is the total amount in the account after *t* years, *P* is the principal (original investment amount), and *r* is the annual interest rate as a decimal.

**Uninhibited Exponential Growth Model**

The **uninhibited exponential growth model** is used when a population grows at a rate proportional to the size of its population and continues to grow without any limiting factors.

This model that describes the population, *P*, after a certain time, *t,* iswhere is the initial population and is a constant called the **relative growth rate**. (Note: *k* may be given as a percent.)

