

## 9. Using Exponential Models

Given an uninhibited exponential growth/decay model, determine the following information.

- Quantity at a given time (p. 339 Example 4b, p. 353 Example 1b)
- Time at which a given quantity is reached, half-life/doubling time (p. 339 Example 4c, p. 353 Example 1c)
- Instantaneous rate of change at a given time (p. 344 Example 8b but with uninhibited growth model)

## 10. Constructing Exponential Models

- If a given situation is best modeled by an exponential function, construct that model. (p. 340 Example 6a - Remember that I want you to solve for  $k$ . Do not assume  $k$  is the given percent.)
- If a given situation will not be modeled well by an exponential function, explain why.

## 11. Indefinite Integrals

- Use indefinite integration and initial conditions to work with functions for position, velocity, and acceleration. (p. 420 Example 11)

## 12. Definite Integrals

- Use definite integration to determine the total change of a function over a period of time. (p. 420 Example 9)

Relevant Old Test Questions:

- Fall 2013 Test 2
  - <http://www.austinmohr.com/13fall060/test2sol.pdf>
  - # 5 (but it uses the wrong technique for finding  $k$ ), 6
- Fall 2013 Test 3
  - <http://www.austinmohr.com/13fall060/test3sol.pdf>
  - # 1