

Math 026L Spring 2002  
Newton's Law of Cooling  
February 14, 2002

In lab you collected data on the cooling of a CBL temperature probe in a cup of cold water. You modeled the temperature two different ways. Your lab report should be no more than one page in length, and should contain the following information.

- (a) A table containing the raw data from the cooling experiment.
- (b) Graphs of the two models superimposed over the raw data (one graph or two).
- (c) Answers to the following questions:
  - (1) What did the semilog graph of  $T - T^*$  show?
  - (2) How did you obtain the model for  $T$  given the linear regression equation for  $T - T^*$  vs.  $t$ ?
  - (3) In Part II, what was the point of graphing the estimates for  $\frac{dT}{dt}$  vs.  $T - T^*$ ?
  - (4) Which model was more accurate? Include the results of your error (Part III) analysis and speculation as to the sources of error in the two models.

**Due at the beginning of lab on Thursday, February 21, 2002.**