## QUIZ 3 - MATH 111 YOUR NAME:

Read each problem **very carefully** before starting to solve it. Each problem is worth 10 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

- 1. A potato is placed in a preheated oven to bake. Its temperature P = P(t) is given by  $P = 400 325e^{-t/50}$ , where P is measured in degrees Fahrenheit and t is the time in minutes since the potato was placed in the oven.
  - (a) Make a graph of P versus t.

- (b) What was the initial temperature of the potato?
- (c) What was the average rate of change of the temperature of the potato during the first half hour of baking? What was it during the second half hour of baking?
- (d) The potato will be done when it reaches a temperature of 270 degrees. Approximate the time when the potato will be done.
- (e) What is the temperature of the oven? Explain how you got your answer.