Quiz 2
Math 230

Recall Newton's Law of cooling/warming:

$$\frac{d\theta}{dt} = -k(\theta - T)$$

where $\theta(t)$ is the temperature of an object as a function of time, $k > 0$ is a constant, and T is the ambient (or surrounding) temperature.

Problem: You set a 20° C pot of water on a burner heated to 200° C. After five minutes, you record the temperature of the water to be 80° C. Assuming that Newton's Law applies, how long will it be (from the moment you put the pot on the burner) til the water boils (i.e. reaches 100° C)?