1. The population (in millions) of a country is modeled by the function $P(t) = 100e^{-0.1t}$
   a. What was the initial population?
   b. At what percentage rate is the population changing with respect to time
   c. What is the rate of change of population after 10 years? Is it increasing or decreasing?
   d. What happens in the long run? (i.e. as $t$ approaches infinity)

2. Suppose the percentage of alcohol in the blood $t$ hours after consumption is given by $C(t) = 0.12te^{-t/2}$
   a. At what rate is the blood alcohol changing at time $t$?
   b. How much time passes before the blood alcohol level begins to decrease?
   c. At what rate is the blood alcohol level changing after 4 hours?