1. The growth rate of a population $P = P(t)$ is governed by the model equation
$\dfrac{dP}{dt} = 0.04P\left(1 - \dfrac{P}{80}\right)$. Determine all the equilibium values. Sketch the long
term behavior of $P(t)$ given each of the initial conditions.
   a. $P(0) = 20$. Label this graph A.
   b. $P(0) = 100$. Label this graph B.
   c. $P(0) = 60$. Label this graph C.
   d.   Now suppose 0.04 is replaced by 0.01 in the model. Take $P(0) = 20$ again.
        Sketch the new graph and label it D.

2. The growth rate of a population $N = N(t)$ is governed by the model equation
$\dfrac{dN}{dt} = 0.04N\left(1 - \dfrac{N}{150}\right)\left(\dfrac{N}{30} - 1\right)$. If $N(0) = 25$, sketch the long term
behavior of $N(t)$, and explain why the graph has the shape that it does.