A certain smoker has a daily intake of 0.02 milligrams of nicotine. It is assumed that 1% of nicotine is disintegrated by the body per day.

1. Set up a difference equation for the amount of nicotine after days, starting with an initial level of
2. Derive a closed form of the solution for .
3. If a concentration of 1mg of nicotine is considered harmful, when does the smoker reach this threshold? How much higher does the concentration rise?