1. For the rate equation \( y' = (y + 1)(5 - y) \) sketch, on the same set of axis, the graphs of the solutions so that (a) \( y(0) = 0 \) and (b) \( y(0) = 6 \).

(c) For the solution with \( y(0) = 0 \) what is a reasonable estimate for \( y(137.2) \)? (Put your answer in the form of a sentence.)

2. Let \( f(t) = t + \frac{4}{t} \) be defined for \( t > 0 \).
   (a) Compute
   \[
   f'(t) = \]
   \[
   f''(t) = \]

(b) Find the smallest value of \( f(t) \) on the interval \( 0 < t < \infty \). Where does this smallest value occur? (You should put your answers in the form of sentences.)