

7. [10 points] A very simple model for the deer population  $P$  in Michigan is  $P' = kP - h$ , where  $k$  and  $h$  are constants, and  $h$  is the allowed number of deer that may be killed by hunters each year.

a. [4 points] What is the meaning of the parameter  $k$ ? Is it positive or negative? Explain.

b. [6 points] Assume that  $k > 0$  and solve the differential equation. What does your solution tell you about the long-term deer population?