

Name

- Estimate parameters in the Lotka-Volterra model 
$$\begin{aligned} m' &= \alpha m - \beta m w \\ w' &= -\gamma w + \delta m w \end{aligned}$$
 for moose (m) and wolves (w).  
Plot the predictions of your model.

1. Show some reasoning to estimate birth and death rates for rabbits then write down and solve a simple ODE modeling an initially small population of rabbits  $r(t)$  on a lush fertile island. Discuss the results.

■ Solve  $y' = y + t y^2$

2. Solve  $y' + y = y^3$