

0. Print your name: _____

1. Suppose demand is given by $q = 500 - 10p^2$. Is demand elastic at $p = \$1$? What about at $p = \$7$?

2. Suppose the ecosystem of an island has carrying capacity of 500 rabbits. If 200 rabbits are introduced, sketch a possible logistic model for the population as a function of time. On a separate graph, show what a logistic predicts if instead 900 rabbits are introduced.

3. Suppose the surge function $y = 30te^{-2t}$ models the concentration (in mg/l) of the drug mathsmartatol. Suppose the drug is effective provided the concentration is at least 3 mg/l. Sketch the graph of concentration as a function of time and indicate approximately the region where the drug is effective.