

**APPM 1350**

**Name:** \_\_\_\_\_

**Fall 2021**

**Quiz 10**

**11/30/2021**

**Time Limit: 10 Minutes**

**Recitation Section:** \_\_\_\_\_

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1. On a certain patch in Montana, a group of rabbits exist. The initial population is 50 rabbits and the number doubles every 100 days.
  - (a) Write down the general differential equation that represents exponential growth and decay.
  - (b) Using the solution of the differential equation, solve for how large the population will be after 50 days. Simplify your answer so that it is in terms of  $\sqrt{2}$ .