

Section number:

Name of recitation instructor:

Names of team members:

Exercise 1. Record your answers here.

Exercise 2. If Y solves $Y' = r_0Y$ and $Y(0) = 1$ and $Y(1) = 2$, find r_0 .

$r_0 =$

Show your work:

Exercise 3. Record here your solution to the differential equation $\frac{dZ}{dt} = \frac{r_0}{P}(P - Z)Z$, such that when $t = 1$, $Z = 1$.

$$t(Z) =$$

Show your work:

Exercise 4. When Z is very close to P , the quantity $(P - Z)$ decays exponentially and can be approximated by Ce^{-rt} , what is the rate of decay? Justify your answer.

$$r =$$

Justification: