> Answer the questions below. You may answer in the space provided. You may use the back or a separate sheet of paper if you need more space. You are to work in groups of no more than four people. Make sure to enter the names of your groupmates below.

Name: _____

Section: _____

Group Members: _____

1. (3 points) A species age distribution of females evolves based on the following: no female is ever more than 3 years old, no female has any offspring at age 0, one year olds have an average of 8 offspring, two year olds have an average of 5 offspring, and no three year old has any offspring. Also, 70% of zero year olds survive to their first birthday, 80% of one year olds survive to their second birthday, and 50% of two year olds survive to their third birthday. Write down the Leslie matrix for this species.

2. The Leslie matrix for the age distribution of females for a certain species is

$$L = \begin{bmatrix} 1 & 8 \\ 0.8 & 0 \end{bmatrix}.$$

   (a) (4 points) Find the eigenvalues of L. Which eigenvalue determines the stable age distribution?

   (b) (3 points) Find the stable age distribution.