Mathematics 172

Quiz # 21 Name: Key

You must show your work to get full credit.

For the Leslie matrix

$$L = \begin{bmatrix} 0.0 & 2.1 & 7.1 \\ 0.15 & 0.0 & 0.0 \\ 0.0 & 0.9 & 0.0 \end{bmatrix}$$

and initial distribution of population

$$\vec{n}(0) = \begin{bmatrix} 75 \\ 8 \\ 7 \end{bmatrix}$$

1. Find $\vec{n}(50)$ and the percent in each stage

$\vec{n}(50) =$ $\begin{bmatrix} 5347 \\ 734.6 \\ 605.3 \end{bmatrix}$

Percent in stage 1 79.96 %

Percent in stage 2 10.98 %

Percent in stage 3 9.05 %

2. Find $\vec{n}(51)$ and the percent in each stage

$\vec{n}(51) =$ $\begin{bmatrix} 5840. \\ 802.1 \\ 661.1 \end{bmatrix}$

Percent in stage 1 79.97%

Percent in stage 2 10.98%

Percent in stage 3 9.05%