

Samples **Leslie matrix ANSWERS**

1. The initial population vector P_0 , the Leslie matrix L , and the final population vector P_2 are:

$$P_0 = \begin{pmatrix} 20 \\ 2 \\ 1 \\ 1 \end{pmatrix} \quad \text{and} \quad L = \begin{pmatrix} 1 & 7 & 4 & 1 \\ 0.4 & 0 & 0 & 0 \\ 0 & 0.8 & 0 & 0 \\ 0 & 0 & 0.4 & 0 \end{pmatrix} \quad \text{and} \quad P_2 = \begin{pmatrix} 101.8 \\ 15.6 \\ 6.4 \\ 0.6 \end{pmatrix}.$$

2. The initial population vector P_0 , the Leslie matrix L , and the final population vector P_2 are:

$$P_0 = \begin{pmatrix} 12 \\ 2 \end{pmatrix} \quad \text{and} \quad L = \begin{pmatrix} 3 & 9 \\ 0.5 & 0 \end{pmatrix} \quad \text{and} \quad P_2 = \begin{pmatrix} 216 \\ 27 \end{pmatrix}.$$

3. The initial population vector P_0 , the Leslie matrix L , and the final population vector P_2 are:

$$P_0 = \begin{pmatrix} 9 \\ 2 \\ 1 \\ 1 \end{pmatrix} \quad \text{and} \quad L = \begin{pmatrix} 1 & 3 & 3 & 0 \\ 0.3 & 0 & 0 & 0 \\ 0 & 0.9 & 0 & 0 \\ 0 & 0 & 0.3 & 0 \end{pmatrix} \quad \text{and} \quad P_2 = \begin{pmatrix} 31.5 \\ 5.4 \\ 2.4 \\ 0.5 \end{pmatrix}.$$