Part Three Write Up

1.
The Leslie matrix is a very interesting representation of population growth. Along the A[i][i – 1] diagonal we see the survival odds for individuals of that age bracket, and along the A[0][j] line we see the replacement ratio for individuals of that category. This means that if A[0][1] = 1, on average individuals 10-19 will have one child each more they move into the next age bracket.

2. The data for these experiments is attached as Part_3_data.xls and Part_3_data.pdf (the PDF version is not optimal for viewing)

3. After 43 iterations of the power method, the largest eigenvalue was 1.2887 with an error of 9.325E-9. This means that the population will to increase exponentially at a maximum of 28.8% each decade.

4. The data for this experiment is also attached as Part_3_data.xls and Part_3_data.pdf (the PDF version is not optimal for viewing).
After 43 iterations of the power method, the largest eigenvalue was 1.16790283 with an error of 8.069E-9. This means that the population will to increase exponentially at a maximum of 16% each decade.