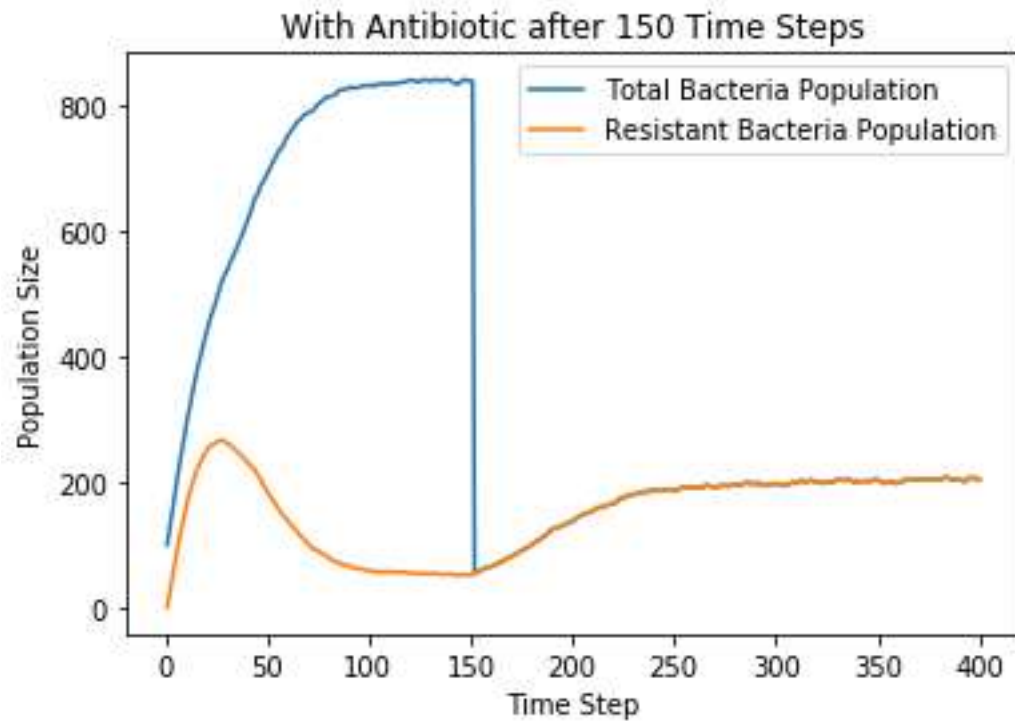


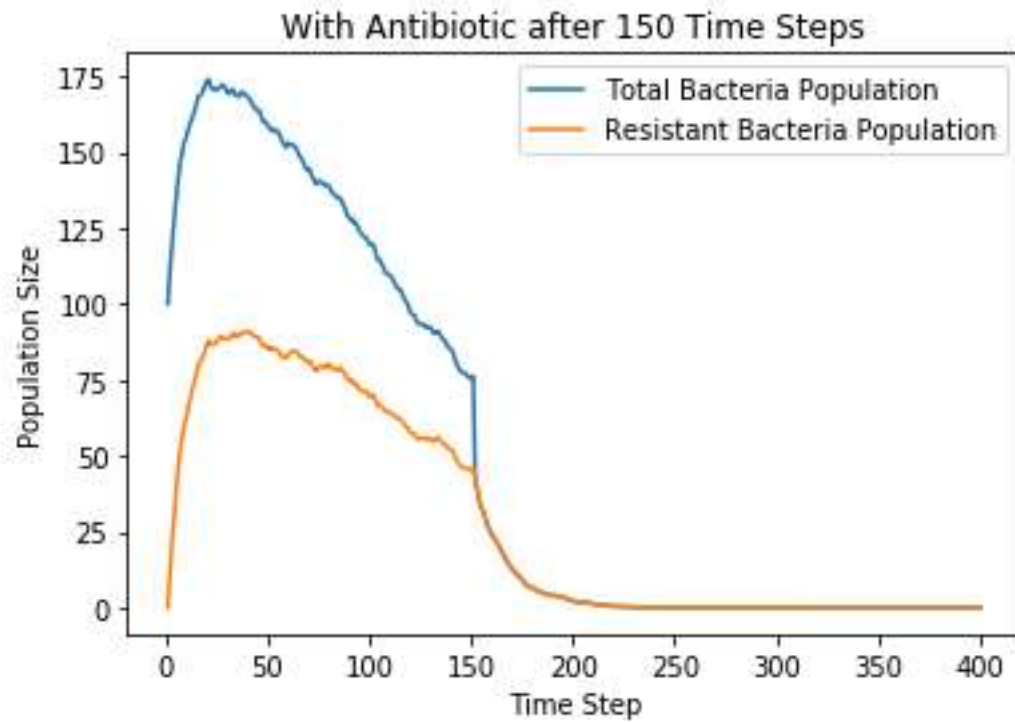
95% Confidence Interval at step 299: [755.56, 764.69]



95% Confidence Interval at step 299

Total Population: [189.65, 205.59]

Resistant Population: [189.65, 205.59]



95% Confidence Interval at step 299

Total Population: [0, 0]

Resistant Population: [0, 0]

1. What happens to the total population before introducing the antibiotic?

Total population rises quickly early on. In simulation A, the population rises to a plateau. This is because the birth probability is higher than the death probability. In contrast, the bacteria population in simulation B rises quickly but then seem to fall back down. This is due to a higher death probability than birth probability.

2. What happens to the resistant bacteria population before introducing the antibiotic?

In simulation B, the resistant bacteria population rises proportionally to the rise in total population. This seems to start to happen in Simulation A as well, but the resistant population drops off fairly quickly. This difference can be attributed to the difference in birth to death rate proportions between the two simulations.

3. What happens to the total population after introducing the antibiotic?

Total population immediately drops to the level of the resistant bacteria population. This is because all non-resistant bacteria die when exposed to antibiotics

4. What happens to the resistant bacteria population after introducing the antibiotic?

In simulation A, the resistant population starts to rise again in contrast to the resistant population in Simulation B that falls to 0. This too can be attributed to the difference in the proportion of birth to death probability between the two simulations.