**Trends of Simulation A and Simulation B**

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

A. In Simulation A, before antibiotics were applied to patients, the total number of bacteria gradually increased and approached max\_pop after the 100th moment.

In Simulation B, the total number of bacteria increases first and then decreases, because B's birth rate is nearly half lower than A's.

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

A. In Simulation A and B, the changes in the number of resistant bacteria are first increased and then decreased, but the increase and decrease are slightly different. This is because the bacteria in A and B have different birth rates, and A has a high birth rate. The number of sexual bacteria grew faster, and the maximum value reached was larger than in B.

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

A. After the use of antibiotics, the number of bacteria has decreased sharply, and all non-resistant bacteria have died. Therefore, the total of antibiotics is equal to resistant. In Simulation A, the birth rate is high enough, so resistant bacteria can still increase under the action of antibiotics, and gradually increase to a stable value; in Simulation B, the birth rate is low, so almost all resistant bacteria die and it is difficult to reproduce.

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

A. After using antibiotics, only bacteria that can survive are resistant bacteria. The change in the number of bacterial populations varies according to the bacterial birth rate, as explained in 3.