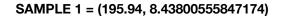
Without Antibiotic Average Population Timestep With an Antibiotic Total Resistant Average Population Ó Timestep With an Antibiotic Total Resistant Average Population 



Timestep

MEAN = 761.4949832775919

WIDTH =1.816847517289788)

**SAMPLE 1** = (0.0, 0.0)

**SAMPLE 2 = (195.94, 8.43800555847174)** 

**SAMPLE 2 = (0.0, 0.0)** 

- 1) Total population is growing until it reaches approximately 800. After that it almost it doesn't change at all.
- 2) At first resistant bacteria population starts to grow fast but after near 50th time step it starts to decrease.
- 3) After introducing the antibiotic, all the non resistant bacterias die. So total bacteria population is going to be the same with the resistant bacteria population after introducing the antibiotic.
- 4) If the birth rate is high enough(sample 1), first it starts to grow and after reaching the population limit it stops. But if birth rate is smaller than the some certain amount that I don't know right now(sample 2) all population will be destroyed.