Final

Name: _____ **ID: _____**

Model with Arena™ the Following Problem

The student affairs office at a university helps students with their inquiries. The office is staffed by one receptionist at the reception office, two financial advisors, and four academic advisors.

Students arrive at the office room according to a exponential process with mean interarrival time of 15 minutes. An incoming student is first checked by a receptionist at the reception office. Check-in time is uniform between 1 and 2 minutes. Students having financial blocks are first sent to the financial advisors (if they have academic block as well and the financial issues are solved, these students are sent to an academic advisor). Students with only academic block are sent directly to an academic advisor. Students with no block may proceed directly to registration.

The financial advising time distribution is triangular with a minimum of 13 minutes, a maximum of 25 minutes, and a most likely value of 19 minutes. The academic advising time distribution is normally distributed with a mean of 25 minutes, and variance of 10.

It has been observed that 80% of students have financial blocks. 10% of all arriving students have only academic block and 10% have no blocks. It is noted that 90% of financially blocked cases will have their issues solved. The unsolved cases remains financially blocked. Half of the financially solved cases have additionally an academic block. By observing academically blocked student cases, it was concluded that 70% would have their cases solved, 20% requires change of major and 10% are dismissed

The student affairs office has the following staffing rules:

1) All staff members are allowed bathroom breaks. The time that a staff member is available is exponentially distributed with mean 180 minutes and the time spent responding to "nature calls" is exponentially distributed with mean 8 minutes. "Nature calls" cannot be delayed. (***Hint***: model as failure).
2) Financial advisors are allowed to take staggered breaks of 15 minutes every 2 hours.
3) Academic advisors breaks altogether for a 45 minutes lunch in the mid of their shift.
4) All staff members are very helpful, and thus may delay their breaks to finish the current case. On the other hand, they consider the time spent on breaks non-negotiable.
5) There is one nine-hour shift per day. After the shift ends, no more students are allowed in but all students inside the office will have their cases concluded.

To estimate the necessary statistics, the simulation of student affairs office must be replicated for a period of 1 year (assume: 365 days/year, 36 off-days, and 5 work days/week).