# Problem 1

Consider the single-server queue with geometrically distributed inter-arrival times and service times as discussed in class, with a departure rate of $\mu = 0.25$. Plot the expected delay of a packet as a function of the arrival rate $\lambda$. You have to run the simulations long enough, for example at least for $10^6$ time slots.

(Hints: use Little's law to calculate the expected delay, but you have to simulate the queue dynamics to get the expected queue length first.)

Note:

- Choose one programming language to do the simulation from C/C++, Matlab, Python, and Java.
- Report should include the plot, and simulation code and annotations.