1. If an infected computer randomly picks a computer in the address space that's already infected, what should the behavior be? Should it basically ignore that computer and move on to the next scan?

   Answer: if a scanned target is an already infected computer, nothing will happen. The scan is treated as if it missed a target and the computer should continue its scanning process.

2. I wasn't sure what the best way to generate a random integer.

   Answer: If you program in C and if you use the rand01() function I provided in my lecture notes "generate-rv", then you can use:
   Address = int(floor(rand01() *Max));
   This will generate an integer value between 0 and Max-1.

1) Since every infected machine will scan until it finds another vulnerable machine, is it safe to say that the infected machines at any time will be in the order of 1,3,6,12,24,48,96,192.....398 ?

Answer: No. a scan is targeting a randomly selected IP address, so which vulnerable computer is infected first is totally random. In addition, not all scans can cause infection. In fact, most scans will be wasted since the number of vulnerable computers is very small compared with the total IP space scanned by the worm.

2) If an infected machine will scan until it finds a vulnerable machine, will the time increase as it goes through the scan each time, or will it wait until after it infect a vulnerable machine?

Answer: This is a discrete time simulation, so at each discrete time tick, each infected machine only generates 2 scans. That is to say, at each discrete time tick, the program goes over all infected machines once, and let each infected node generate 2 scans.

3) For the 100 simulations, are the plots suppose to be overlapping, if so how would you find the average?

Answer: You only plot one curve for the average I(t) over 100 simulation runs. Do not plot 100 curves. I explained how to compute average I(t) for any given t in class. See my lecture video.

4) Should the 100 simulations plot overlap with the analytical plot, or should it be the average of the 100 simulations that overlaps with the analytical?

Answer: The average I(t) curve from simulation should be a little slower than analytical curve.