

CS 6210: Perf. Eval. of Computer Systems; Aug. 2011, Prof. Krishna Sivalingam
Tutorial 6, Nov. 16, 2011, OPEN BOOK/NOTES; CLOSED NEIGHBORS. TA/instructor help can
be requested.

1. Consider two IP-prefix lookup algorithms (A and B) with the following average computation time (in micro-seconds) per dataset:

Alg A	Alg. B
100	108
105	95
45	58
34	38
87	78
123	111
63	57
95	104
21	23
11	15

Assume that the observations are paired. Can you state with 90% confidence that Alg. A is better than Alg. B? Use the zero confidence interval method. If we need to conclusively state this with an accuracy of 1%, how many samples will be needed?

2. If 100 out of 100000 bits are in error, what is the 95% CI for the bit error rate? If we need to achieve an accuracy of 5%, how many bit samples will be needed?
3. Consider a system Main Memory $\in \{16, 32GB\}$.