



Sri Lanka Institute of Information Technology

Year 02 – Semester II – 2023

Probability and Statistics – IT2110

Tutorial 06

- 1) Random samples of size 225 are drawn from a population with mean 100 and standard deviation 20. Find the mean and standard deviation of the sample mean. Calculate $P(\bar{X} < 97.5)$.
- 2) Random samples of size 64 are drawn from a population with mean 32 and standard deviation 5. Find the mean and standard deviation of the sample mean. Calculate $P(\bar{X} > 33.5)$.
- 3) A population has mean 75 and standard deviation 12.
 - a) Random samples of size 121 are taken. Find the mean and standard deviation of the sample mean.
 - b) How would the answers to part (a) change if the size of the samples were 400 instead of 121?
- 4) A population has mean 5.75 and standard deviation 1.02.
 - a) Random samples of size 81 are taken. Find the mean and standard deviation of the sample mean.
 - b) How would the answers to part (a) change if the size of the samples were 25 instead of 81?