**Year 2 Semester 1 (2025)**

IT2120 - Probability and Statistics Lab Sheet 07

# Exercise

**Instructions**: Create a folder in your desktop with your registration number (Eg: “IT.......”). You need to save the R script file and take screenshots of the command prompt with answers and save it in a word document inside the folder. Save both R script file and word document with your registration number (Eg: “IT........”). After you finish the exercise, zip the folder and upload the zip file to the submission link.

1. A train arrives at a station uniformly between 8:00 a.m. and 8:40 a.m. Let the random variable X represent the number of minutes the train arrives after 8:00 a.m. What is the probability that the train arrives between 8:10 a.m. and 8:25 a.m.?

A white background with black text

AI-generated content may be incorrect.

A white background with black text

AI-generated content may be incorrect.

1. The time (in hours) to complete a software update is exponentially distributed with rate. Find the probability that an update will take at most 2 hours.

A computer screen shot of a number

AI-generated content may be incorrect.

A black text on a white background

AI-generated content may be incorrect.

1. Suppose IQ scores are normally distributed with a mean of 100 and a standard deviation of 15.
   1. What is the probability that a randomly selected person has an IQ above 130?

A close-up of a computer code

AI-generated content may be incorrect.

A black text on a white background

AI-generated content may be incorrect.

* 1. What IQ score represents the 95th percentile?

A black and blue text

AI-generated content may be incorrect.

A black text on a white background

AI-generated content may be incorrect.