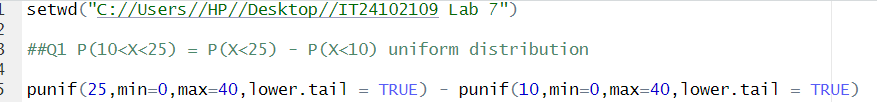
**IT24102109 – PS Lab 7**

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 close-up of a computer screen

AI-generated content may be incorrect.

1. The time (in hours) to complete a software update is exponentially distributed with rate λ = 1 3 . Find the probability that an update will take at most 2 hours.

A close up of a text

AI-generated content may be incorrect.

A close-up of a white background

AI-generated content may be incorrect.

3. Suppose IQ scores are normally distributed with a mean of 100 and a standard deviation of 15.

i. What is the probability that a randomly selected person has an IQ above 130?

A black and blue text

AI-generated content may be incorrect.

A close-up of a math problem

AI-generated content may be incorrect.

ii. What IQ score represents the 95th percentile?

A number and a mathematical equation

AI-generated content may be incorrect.

A close-up of numbers

AI-generated content may be incorrect.