Probability and Statistics - IT2120 – Lab Sheet 07

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IT24102395_Lab_07.R

Source on Save | Run

```r
#Q1
#Uniform Distribution
#Let X - The number of minutes the train arrives after 8:00 a.m.
#P(10 <= X <= 25) = P(X <= 25) - P(X <= 10)
punif(25, min = 0, max = 40, lower.tail = TRUE) - punif(10, min = 0, max = 40, lower.tail = TRUE)

#Q2
#Exponential Distribution
#Let X - The time (in hours) to complete a software update
#P(X <= 2)
pexp(2, rate = 0.33, lower.tail = TRUE)

#Q3
#Normal Distribution
#i) P(X > 130) = 1 - P(X <= 130)
1 - pnorm(130, mean = 100, sd = 15, lower.tail = TRUE)
#ii) P (X <= x) = 0.95
qnorm(0.95, mean=100, sd=15, lower.tail=TRUE)

```

R 4.5.1 · ~/

```
> #Q1
> #Uniform Distribution
> #Let X - The number of minutes the train arrives after 8:00 a.m.
> #P(10 <= X <= 25) = P(X <= 25) - P(X <= 10)
> punif(25, min = 0, max = 40, lower.tail = TRUE) - punif(10, min = 0, max = 40, lower.tail = TRUE)
[1] 0.375
>
> #Q2
> #Exponential Distribution
> #Let X - The time (in hours) to complete a software update
> #P(X <= 2)
> pexp(2, rate = 0.33, lower.tail = TRUE)
[1] 0.4831487
>
> #Q3
> #Normal Distribution
> #i) P(X > 130) = 1 - P(X <= 130)
> 1 - pnorm(130, mean = 100, sd = 15, lower.tail = TRUE)
[1] 0.02275013
> #ii) P (X <= x) = 0.95
> qnorm(0.95, mean=100, sd=15, lower.tail=TRUE)
[1] 124.6728
```