IT24100047

Lab 07Exercise

01.

```
setwd("C:\\Users\\chanu\\OneDrive\\Desktop\\IT24100047_LAB_07")
#Exercise
#01
#A train arrives at a station uniformly between 8:00 a.m. and 8:40 a.m. Let the 5 #random variable X represent
#a.m. what is the probability that the train arrives between 8:10 a.m. and 8:25
#a.m.?

punif(25, min = 0, max = 40, lower.tail = TRUE) -  punif(10, min = 0, max= 40, lower.tail = TRUE)

```

```
Console  Terminal  Background Jobs
R 4.5.1 · C:/Users/chanu/OneDrive/Desktop/IT24100047_LAB_07/
> setwd("C:\\Users\\chanu\\OneDrive\\Desktop\\IT24100047_LAB_07")
> punif(25, min = 0, max = 40, lower.tail = TRUE) -  punif(10, min = 0, max= 40, lower.tail = TRUE)
[1] 0.375
>
>
```

02.

```
#02
#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.
pexp(2, rate = 0.33, lower.tail = TRUE)

```

```
> #02
> #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.
> pexp(2, rate = 0.33, lower.tail = TRUE)
[1] 0.4831487
```

03.

```
#03
#Suppose IQ scores are normally distributed with a mean of 100 and a standard
#deviation of 15.
#03.1
#What is the probability that a randomly selected person has an IQ
#above 130?
pnorm(130, mean = 100, sd = 15, lower.tail = TRUE)
```

```
> #03
> #Suppose IQ scores are normally distributed with a mean of 100 and a standard
> #deviation of 15.
> #03.1
> #What is the probability that a randomly selected person has an IQ
> #above 130?
> pnorm(130, mean = 100, sd = 15, lower.tail = TRUE)
[1] 0.9772499
```

```r
#03.2
#What IQ score represents the 95th percentile?
qnorm(0.95,mean = 100, sd = 15 )
```

```
> #03.2
> #What IQ score represents the 95th percentile?
> qnorm(0.95,mean = 100, sd = 15 )
[1] 124.6728
>
```