

PS_Labsheet-07_IT24104154

```
1 setwd("C:\\Users\\Tharusha\\Desktop\\PS_Lab_07")
2
3 #Question 01
4
5 #Random variable x follows a uniform distribution with a=0 and b=40
6
7 #Probability that the train arrives between 8:10 a.m. and 8:25 a.m :
8 punif(25,min = 0, max = 40, lower.tail = TRUE) -punif(10,min = 0, max = 40, lower.ta
9
10 #Question 02
11
12 #Random variable x has exponential distribution with lambda=0.34
13
14 #Probabilty that an update will take at most 2 hours :
15 pexp(2,rate = 0.334,lower.tail = TRUE)
16
17 #Question 03
18
19 #Random variable x has normal distribution with mean=100 and standard deviation=15
20
21 #i.Probability that a randomly selected person has an IQ above 130 :
22 1-pnorm(130,mean = 100, sd=15, lower.tail = TRUE)
23
24 #ii.IQ Score represents the 95th percentile :
25 qnorm(0.95,mean = 100, sd=15,lower.tail = TRUE)
```

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R 4.5.1 - C:/Users/Tharusha/Desktop/PS_Lab_07/
> setwd("C:\\Users\\Tharusha\\Desktop\\PS_Lab_07")
> #Question 01
>
> #Random variable x follows a uniform distribution with a=0 and b=40
> #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)
[1] 0.375
> #Question 02
>
> #Random variable x has exponential distribution with lambda=0.34
> #Probabilty that an update will take at most 2 hours :
> pexp(2,rate = 0.334,lower.tail = TRUE)
[1] 0.487267
> #Question 03
>
> #Random variable x has normal distribution with mean=100 and standard deviation=15
> #i.Probability that a randomly selected person has an IQ above 130 :
> 1-pnorm(130,mean = 100, sd=15, lower.tail = TRUE)
[1] 0.02275013
> #ii.IQ Score represents the 95th percentile :
> qnorm(0.95,mean = 100, sd=15,lower.tail = TRUE)
[1] 124.6728
>
```