

IT24103927

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IT2120 - Probability and Statistics

Lab Sheet 6

Exercise

1)

a. $X \sim \text{Binomial}(n=50, p=0.85)$

```
setwd("C:\\Users\\HSAND\\OneDrive\\Desktop\\IT24103927")  
  
#part 1  
#i  
#Binomial Distribution  
  
> setwd("C:\\Users\\HSAND\\OneDrive\\Desktop\\IT24103927")  
>  
> #part 1  
> #i  
> #Binomial Distribution
```

b.

```
#ii  
1- pbinom(47,50,0.85,lower.tail =TRUE)-pbinom(47,50,0.85,lower.tail =FALSE)  
  
> #ii  
> 1- pbinom(47,50,0.85,lower.tail =TRUE)-pbinom(47,50,0.85,lower.tail =FALSE)  
[1] -1.561251e-17  
>
```

2)

a. Let X = number of calls received in one hour

b. If calls arrive independently with average rate 12 per hour, $X \sim \text{Poisson}(\lambda=12)$

c.

```
#part 2
#i X = the number of customer calls received in an hour.
#ii. poisson distribution
#iii
dpois(15,12)|
```

```
> #part 2
> #i X = the number of customer calls received in an hour.
> #ii. poisson distribution
> #iii
> dpois(15,12)
[1] 0.07239112
```