Probability and Statistics - IT2120

Lab sheet 06

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Exercise:

Part 01

i)

```
# part 1
# 1)
#Binomial Distribution with n=50 and p=0.85

```

ii)

```
# 2)
# probability that at least 47 students passed = (p>=47)
# Rearranged probability statement
#P(X>=47) = 1-P(X<47) = 1-P(X<=46)
1- pbinom(46, 50, 0.85, lower.tail = TRUE)

```

output

```
> # 2)
> # probability that at least 47 students passed = (p>=47)
> # Rearranged probability statement
> #P(X>=47) = 1-P(X<47) = 1-P(X<=46)
> 1- pbinom(46, 50, 0.85, lower.tail = TRUE)
[1] 0.04604658
```

Part 02

i)

```
16  # part 2
17  # 1)
18  # Number of customer calls received on a given hour
```

ii)

```
19  # 2)
20  # Poisson distribution with lambda = 12
```

iii)

```
23  # 3)
24  # Exactly 15 calls received in an hour =  P(X=15)
25  dpois(15, 12)
```

output

```
> # 3)
> # Exactly 15 calls received in an hour =  P(X=15)
> dpois(15, 12)
[1] 0.07239112
```