

# Probability and Statistics - IT2120

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Ex 01)

```
1 #Exercise 01
2
3 #distribution of X
4 n <- 50 #n= number of students
5 p <- 0.85 #p= probability of passing
6
7 #at least 47 students passed the test
8 # X >= 47, so 1 - p(X <= 46), and the distribution is binomial
9 1 - pbinom(46, size = n, prob = p)
10
11
```

```
Console Terminal x Background Jobs x
R 4.5.1 ~/
> #Exercise 01
>
> #distribution of X
> n <- 50 #n= number of students
> p <- 0.85 #p= probability of passing
>
> #at least 47 students passed the test
> # X >= 47, so 1 - p(X <= 46), and the distribution is binomial
> 1 - pbinom(46, size = n, prob = p)
[1] 0.04604658
```

Ex 02)

```
12 #Exercise 02
13
14 #random variable for the problem x= num of calls per hour
15
16 #distribution of x
17 lambda = 12
18
19 #exatly 15 calls received in an hour
20 # x = 15, and the distribution is poisson
21 dpois(15, lambda = 12 )
```

```
> #Exercise 02
>
> #random variable for the problem x= num of calls per hour
>
> #distribution of x
> lambda = 12
>
> #exatly 15 calls received in an hour
> # x = 15, and the distribution is poisson
> dpois(15, lambda = 12 )
[1] 0.07239112
```