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Module- PS

Exercise

1. An IT company claims that their newly developed learning platform improves student performance in online tests. According to previous data, 85% of students who used the platform passed their online tests. A batch of 50 students is selected at random who have completed the course using this platform. Let X denote the number of students who passed the test out of 50 students.

- i. What is the distribution of X ?

```
# Binomial Distribution  
# random variable x has binomial distribution with n=50 and p=0.85
```

- ii. What is the probability that at least 47 students passed the test?

```
> pbinom(46,50,0.85,lower.tail = FALSE)  
[1] 0.04604658
```

2. A call center receives an average of 12 customer calls per hour.

- i. What is the random variable (X) for the problem?

```
# X= Number of calls received in one hour
```

- ii. What is the distribution of X ?

```
# Poisson Distribution  
# random variable x has poisson distribution with lambda=12
```

- iii. What is the probability that exactly 15 calls are received in an hour?

```
> dpois(15,12)  
[1] 0.07239112
```