

PS Lab 6

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

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

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> #Question 1- ii  
> 1- pbinom(47,50,0.85,lower.tail = TRUE)  
[1] 0.01418852
```

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 an hour

ii. What is the distribution of X ?

- Poisson Distribution

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

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> #Question 2- iii  
> dpois(15,12)  
[1] 0.07239112
```