PS_LAB – 6

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```
> # part1
> # binomial Distribution
> # here random variable x has binomial distribution with n=44 and p=0.92
>
> # part 2
> dbinom(40, 44, 0.92)
[1] 0.1979776
>
> # part 3
> # find p(x<=35)
> pbinom(35, 44, 0.92, lower.tail = TRUE)
[1] 0.007252274
>
> # part 4
> 1-pbinom(37, 44, 0.92, lower.tail = TRUE)
[1] 0.9412233
> pbinom (37, 44, 0.92, lower.tail =  FALSE)
[1] 0.9412233
>
> # part 5
> pbinom(42, 44, 0.92, lower.tail = TRUE) - pbinom(39, 44, 0.92, lower.tail = TRUE)
[1] 0.6025556
```

```
> # Question 2
> # part 1
> # number of babies born in a hospital
>
> # part 2
> # poisson Disribution
>
> # part 3
> # p(x=6)
> dpois(6, 5)
[1] 0.1462228
>
> # part 4
> # p(x>6)
> ppois(6, 5, lower.tail = FALSE)
[1] 0.2378165
>
```

```
> # Question 3
> # part 1
> # binomial Distribution
> # here random variable x has binomial distribution with n=50 and p=0.85
>
> # part 2
> # at least 47 student passed the test p(x>=47)
> pbinom(46, 50, 0.85,  lower.tail = FALSE)
[1] 0.04604658
> 1-pbinom(46, 50, 0.85,  lower.tail = TRUE)
[1] 0.04604658
>
```

```
> # question 3 part 2
> # part 1
> # number of receives call in per hour
>
> # part 2
> # poisson distribution
> # here random variable x has poisson distribution with lambda = 12
>
> # part 3
> # p(x=15)
> dpois(15, 12)
[1] 0.07239112
>
```