Q.1

```
> #1
> #1.1
> #binomial distribution
>
> #1.2
> dbinom(40,44,0,92)
[1] -Inf
> #1.3
> pbinom(35,44,0.92,lower.tail = TRUE)
[1] 0.007252274
> #1.4
> 1-pbinom(37,44,0.92,lower.tail = TRUE)
[1] 0.9412233
> pbinom(37,44,0.92,lower.tail = TRUE)
[1] 0.05877672
> #1.5
> pbinom(42,44,0.92,lower.tail = TRUE)-pbinom(39,44,0.92,lower.tail = TRUE)
[1] 0.6025556
>
```

Q.2

```
> #2
> #2.1
> #Number of babies born in a hospital on a given day
>
> #2.2
> #position distribution
> #here,random varible x has position distribution with lamba 5
> #2.3
> dpois(6,5)
[1] 0.1462228
>
> #2.4
> ppois(6,5,lower.tail = FALSE)
[1] 0.2378165
>
```

Exercise

1

1. Binomial distribution
2.
```
Probability that at least 47 students passed the test:  0.04604658
> 
```

2

1. The random variable X represents the number of customer calls received in an hour.
2. λ=12
3.
```
> cat("Probability of receiving exactly 15 calls in an hour: ", prob_15_calls, "\n")
Probability of receiving exactly 15 calls in an hour:  0.07239112
> 
```