Assignment - 3

Session 8 – Exploratory Data Analytics

1. A recent national study showed that approximately 44.7% of college students have used Wikipedia as a
source in at least one of their term papers. Let X equal the number of students in a random sample of
size n = 31 who have used Wikipedia as a source.
Perform the below functions
    a. Find the probability that X is equal to 17

Ans:

```
> dbinom(17,size=31,prob=0.447)
[1] 0.07532248
```

    b. Find the probability that X is at most 13

Ans:

```
> pbinom(13,size=31,prob=0.447)
[1] 0.451357
```

    c. Find the probability that X is bigger than 11.

Ans:

```
> pbinom(11,size=31,prob=0.447,lower.tail=F)
[1] 0.8020339
```

    d. Find the probability that X is at least 15.

Ans:

```
> pbinom(14,size=31,prob=0.447,lower.tail=F)
[1] 0.406024
```

    e. Find the probability that X is between 16 and 19, inclusive

Ans:

```
> #it will take continous values from 16 to 19
> sum(dbinom(16:19,size=31,prob=0.447))
[1] 0.2544758
> #or
> #we can do like this too
> diff(pbinom(c(19,15),size=31,prob=0.447,lower.tail=F))
[1] 0.2544758
```