

# SESSION 8 – ASSIGNMENT 8.3

Date: 29<sup>th</sup> Jan 2019

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 operations:

- a. Find the probability that  $X$  is equal to 17

```
dbinom(17,size = 31,prob = 0.447)
```

```
[1] 0.07532248
```

- b. Find the probability that  $X$  is at most 13

```
pbinom(13,size = 31,prob = 0.447)
```

```
[1] 0.451357
```

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

```
pbinom(11,size = 31,prob = 0.447,lower.tail = F)
```

```
[1] 0.8020339
```

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

```
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

```
sum(dbinom(16:19,size = 31,prob = 0.447))
```

```
[1] 0.2544758
```