Assignment 8.3

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

1. Find the probability that X is equal to 17

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

1. Find the probability that X is at most 13

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

[1] 0.451357

[1] 0.2544758

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

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

[1] 0.8020339

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

> pbinom(14,size=31,prob=0.447,lower.tail=F)

[1] 0.406024

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

> #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