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

#given

#size=31

#prob=0.447

#x=binom(size=31,prob=0.447)

#x

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

> #it will take continous values from 16 to 19

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

[1] 0.2544758