Assignment\_4.6

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

Solution:

pbinom(17, 31, 0.447)

0.0753 is the probability that x is equal to 17

b. Find the probability that X is at most 13

Solution:

pbinom(13, 31, 0.447)

0.4514 is the probability that x is at most 13

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

Solution:

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

# 0.8020 is the probability that x is bigger than 11

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

Solution:

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

0.4060 is the probability that x is at least 15

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

Solution:

sum(dbinom(16:19, 31, 0.447))

diff(pbinom(c(19,15), 31, 0.447, lower.tail = FALSE))

# 0.2545 is the probability between 16 and 19 , inclusive