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)**

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b. Find the probability that X is at most 13

ANS. **pbinom(13, size = 31, prob = 0.447)**

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

ANS. **pbinom(11, size = 31, prob = 0.447, lower.tail = FALSE)**

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

ANS**. pbinom(14,size=31,prob=0.447,lower.tail = FALSE)**



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

ANS. **sum(dbinom(16:19, size = 31, prob = 0.447))**

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

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