**# 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**

dbinom(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**

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.**

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.**

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**

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**