Assignment8.3

Problem Statement:

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.

```
#assignment 8.3
#probability that x is equal to 17
dbinom(17,size = 31,prob = 0.447)

#Find the probability that x is at most 13
pbinom(13,size = 31,prob = 0.447)

#Find the probability that x is bigger than 11
pbinom(11,size = 31,prob = 0.447,lower.tail = FALSE)

#Find the probability that x is at least 15
pbinom(14,size = 31,prob = 0.447,lower.tail = FALSE)

#Find the probability that x is 16 and 19,inclusive.
sum(dbinom(16:19,size = 31,prob = 0.447))
diff(pbinom(c(19,15),size = 31,prob = 0.447,lower.tail = FALSE))

```

```
> dbinom(17,size = 31,prob = 0.447)
[1] 0.07532248
> pbinom(13,size = 31,prob = 0.447)
[1] 0.451357
> pbinom(11,size = 31,prob = 0.447)
[1] 0.1979661
> pbinom(11,size = 31,prob = 0.447,lower.tail = FALSE)
[1] 0.8020339
> pbinom(14,size = 31,prob = 0.447,lower.tail = FALSE)
[1] 0.406024
> sum(dbinom(16:19,size = 31,prob = 0.447))
[1] 0.2544758
> diff(pbinom(c(19,15)size = 31,prob = 0.447,lower.tail = FALSE))
Error: unexpected symbol in "diff(pbinom(c(19,15)size"
> diff(pbinom(c(19,15),size = 31,prob = 0.447,lower.tail = FALSE))
[1] 0.2544758
>
```