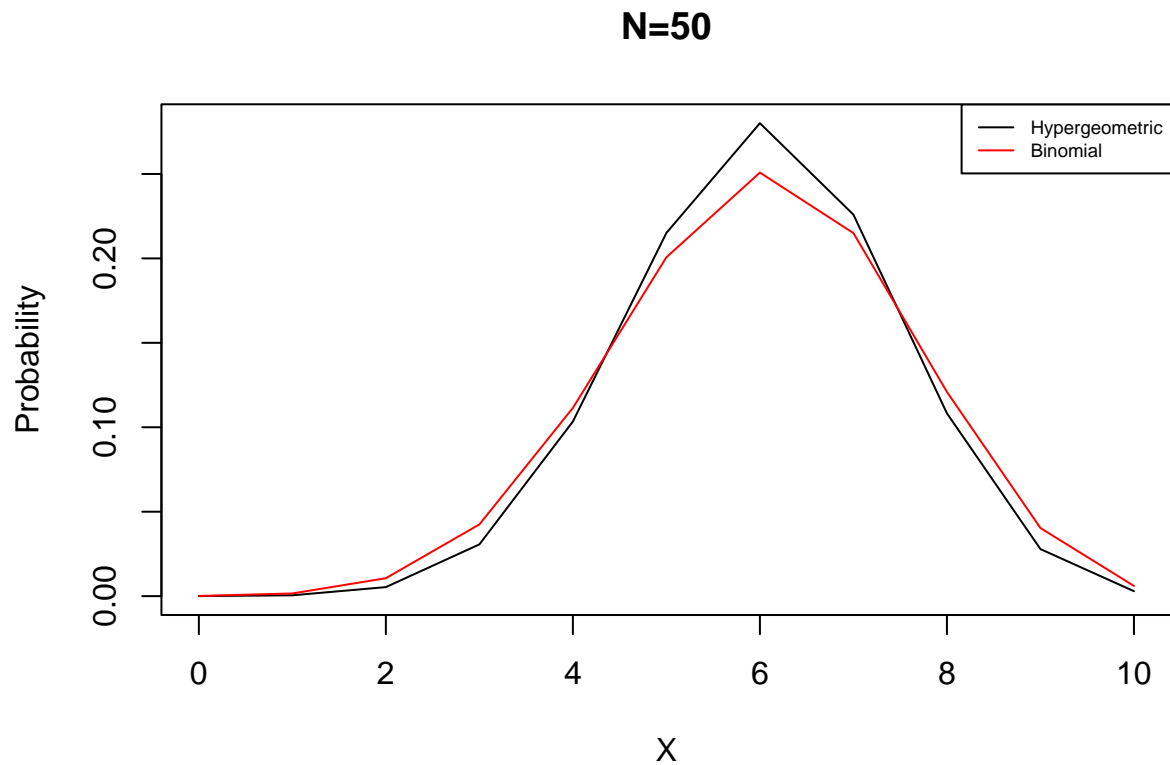# Shi.Chunlin.Hw3

Chunlin Shi

2023-09-17
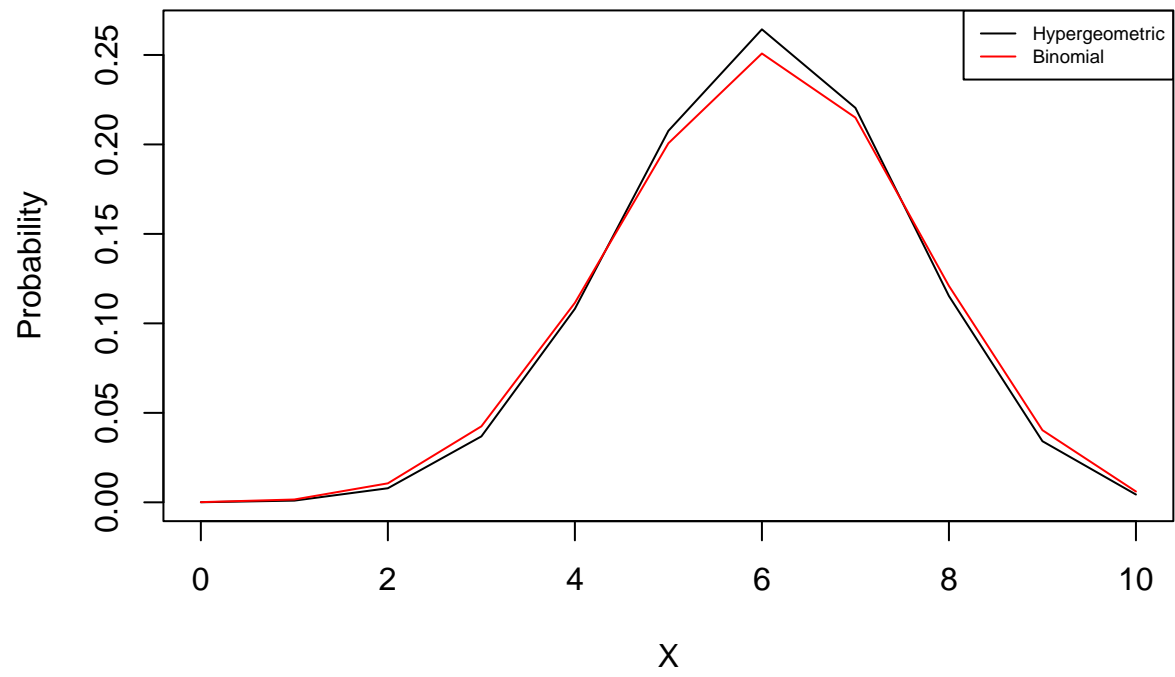
Q1
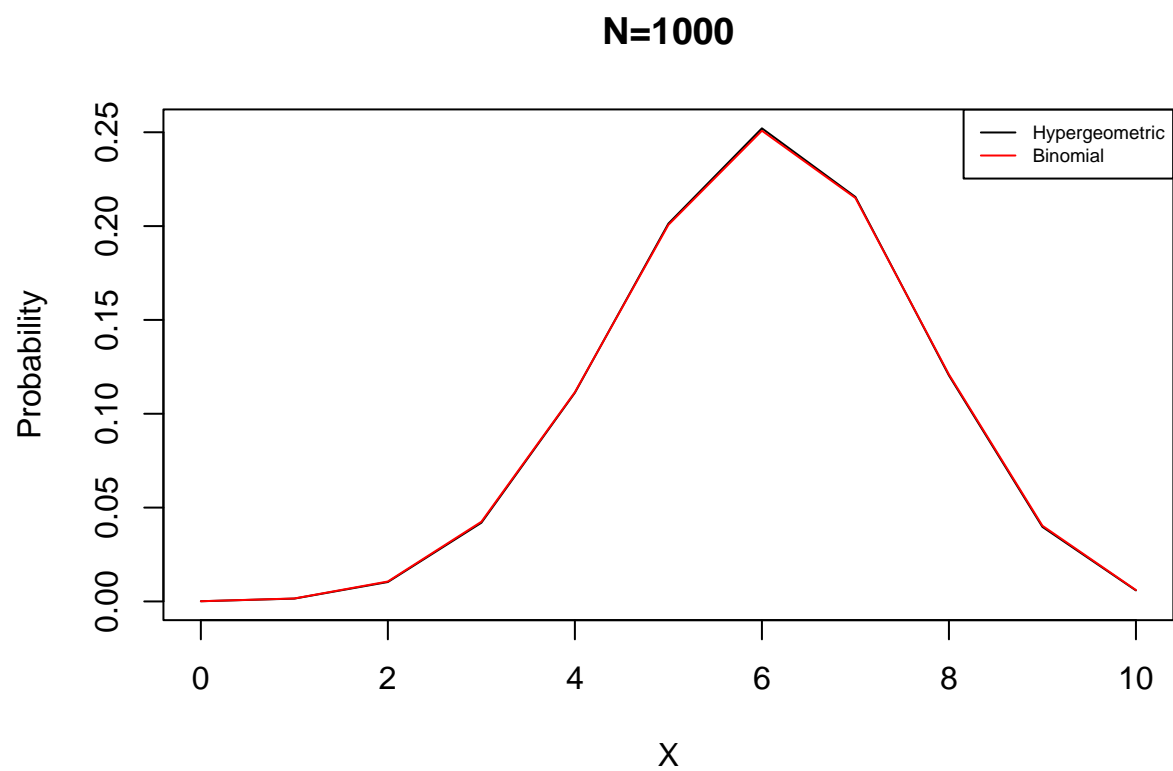
```r
n = 10

for (N in c(50, 100, 1000)) {
    M = N * 0.6
    prob_Hyper = dhyper(0:10, M, N-M, n)
    prob_Binomial = dbinom(0:10,n,0.6)
    plot(0:10, prob_Hyper, xlab="X", ylab="Probability", type="l", main = paste("N=",N,sep=""))
    lines(0:10, prob_Binomial, col="red")
    legend("topright", c("Hypergeometric","Binomial"), col=c("black","red"), lty=1, cex=0.6)

}
```

N=50

N=100

N=1000

From the graphs above, we can clearly see that when N is getting larger, the approximation gets better