Oblig 5

Sigbjørn Fjelland

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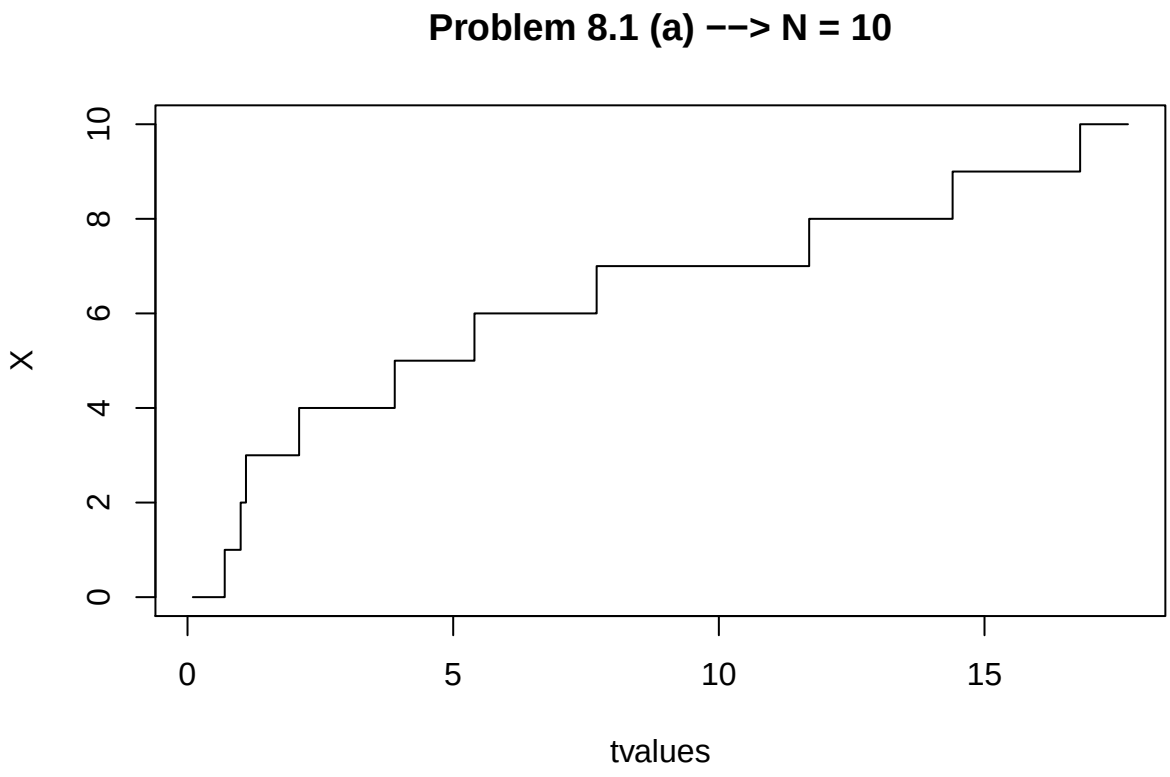
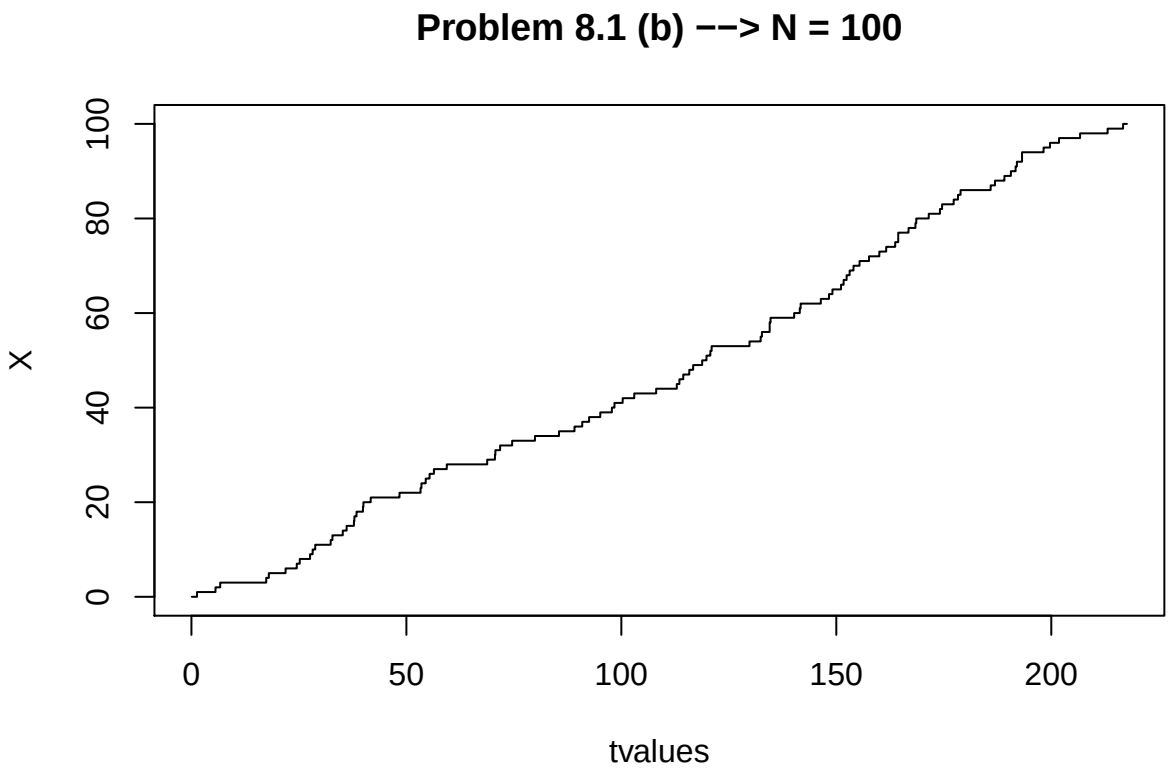
Problem 8.1

```
lb<-0.5
N<-10
T<-rexp(N,lb)
S<-rep(0,N)
S[1]<-T[1]
for(k in 2:N) S[k]<- S[k-1] + T[k]
delta<-0.1
tmax<- S[N]+ 0.5/lb
tvalues<-seq(delta, tmax,delta)
ntvalues<- length(tvalues)
X<-rep(0, ntvalues)
for(t in 1: ntvalues) X[t]<- length( which( S<=tvalues[t] ))
plot(tvalues, X, type="s", main = 'Problem 8.1 (a) --> N = 10')
```



```
lb<-0.5
N<-100
T<-rexp(N,lb)
S<-rep(0,N)
S[1]<-T[1]
for(k in 2:N) S[k]<- S[k-1] + T[k]
delta<-0.1
tmax<- S[N]+ 0.5/lb
tvalues<-seq(delta, tmax,delta)
ntvalues<- length(tvalues)
X<-rep(0, ntvalues)
for(t in 1: ntvalues) X[t]<- length( which( S<=tvalues[t] ))
plot(tvalues, X, type="s", main = 'Problem 8.1 (b) --> N = 100')
```



```r
lb<-0.5
N<-1000
T<-rexp(N,lb)
S<-rep(0,N)
S[1]<-T[1]
for(k in 2:N) S[k]<- S[k-1] + T[k]
delta<-0.1
tmax<- S[N]+ 0.5/lb
tvalues<-seq(delta, tmax,delta)
ntvalues<- length(tvalues)
X<-rep(0, ntvalues)
for(t in 1: ntvalues) X[t]<- length( which( S<=tvalues[t] ))
plot(tvalues, X, type="s", main = 'Problem 8.1 (c) --> N = 1000')
```