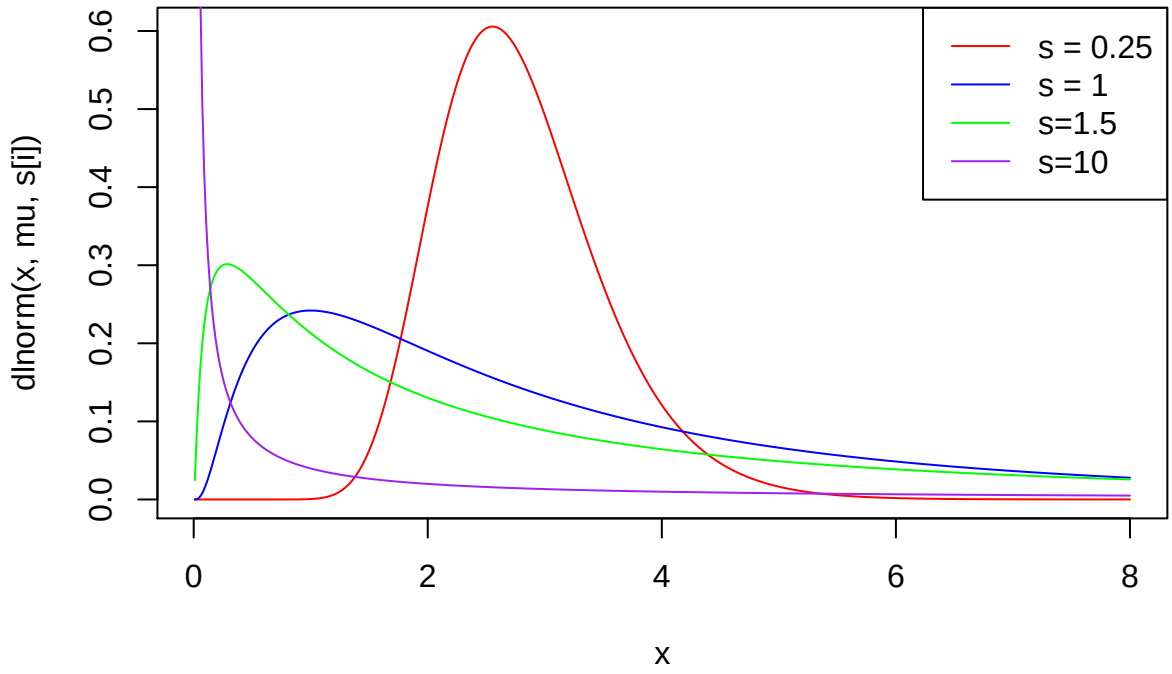
Labb 9

Problem 15

1b

```
mu = 1.0
s = c(0.25,1,1.5,10)
cols = c("RED","BLUE","GREEN","PURPLE")
x <- seq(0.01,8,length=500)
for (i in 1:4){
  if (i == 1)
    plot(x,dlnorm(x,mu,s[i]),col=cols[i],type="l")
  else
    lines(x,dlnorm(x,mu,s[i]),col=cols[i],type="l")
}
legend("topright",legend=c("s = 0.25","s = 1","s=1.5","s=10"),col=c("RED","BLUE","GREEN","PURPLE"),lty=
```

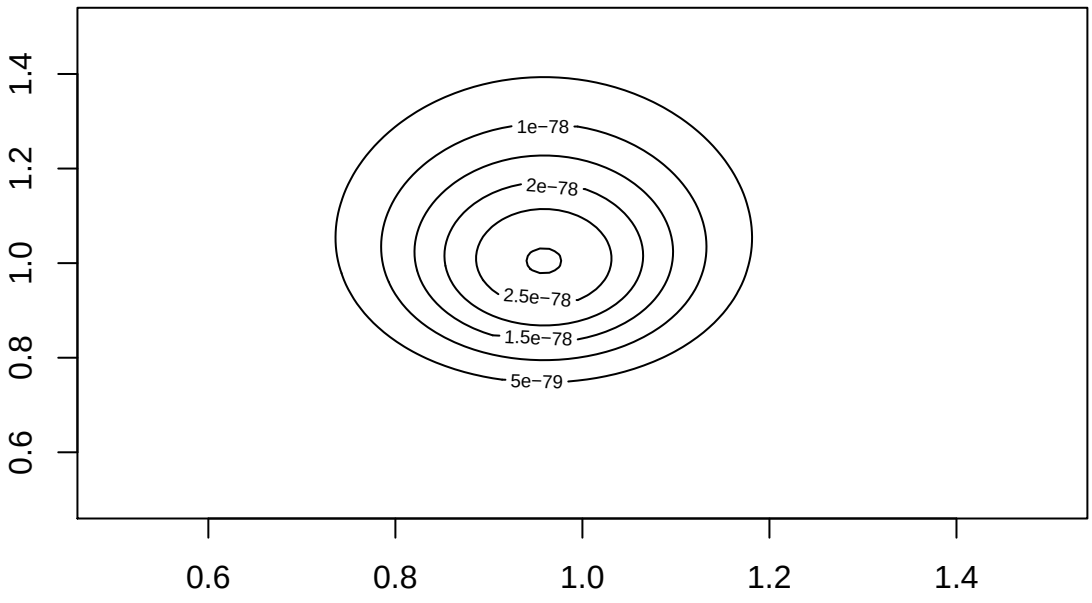


1c

```
sample = rlnorm(75,1,1)

likeli <- function(x){
  prod(dlnorm(sample,x[1],sqrt(x[2])))
}

mu <- seq(0.5,1.5,length=100)
s <- seq(0.5,1.5,length=100)
grid = expand.grid(mu,s)
z = apply(grid,1,likeli)
z = array(z,c(100,100))
contour(mu,s,z)
```


1e−78
2e−78
2.5e−78
1.5e−78
5e−79
0.6
0.8
1.0
1.2
1.4
0.6
0.8
1.0
1.2
1.4