

```
#####  
# 10. RANDOM NUMBERS AND DISTRIBUTIONS  
#####  
## clear memory  
rm(list = ls())  
  
##-----  
## 11.1 Uniform random number  
##-----  
  
r = runif(10000)  
  
## show distribution  
x11()  
plot(density(r))  
x=seq(-0.1,1.1,0.01)  
lines(x,dunif(x),col=2)  
  
##-----  
## 11.2 Normal distribution  
##-----  
  
r = rnorm(10000)  
  
## show distribution  
x11()  
plot(density(r))  
x=seq(-4,4,0.01)  
lines(x,dnorm(x),col=2)  
  
x11()  
plot(x,pnorm(x))  
  
##-----  
## 11.2 Wilcox.test  
##-----  
  
wilcox.test(Mice$Weight.change[Mice$Sex == "m"],  
            Mice$Weight.change[Mice$Sex == "f"])  
  
##-----  
## 11.3 Test for Variables  
##-----  
  
var.test(Mice$Weight.change[Mice$Sex == "m"],  
         Mice$Weight.change[Mice$Sex == "f"])  
  
##-----  
## 11.4 Test for Normality  
##-----  
  
x = Mice$Weight.change  
  
shapiro.test(x)  
ks.test(x,"pnorm", mean(x), sd(x))  
  
## For fun: check central limit theorem  
x=runif(100)
```

```
shapiro.test(x) ## negative...

x=x*0
for (i in 1:12)
  x = x + runif(100)
shapiro.test(x) ## positive! :)
```