Script5

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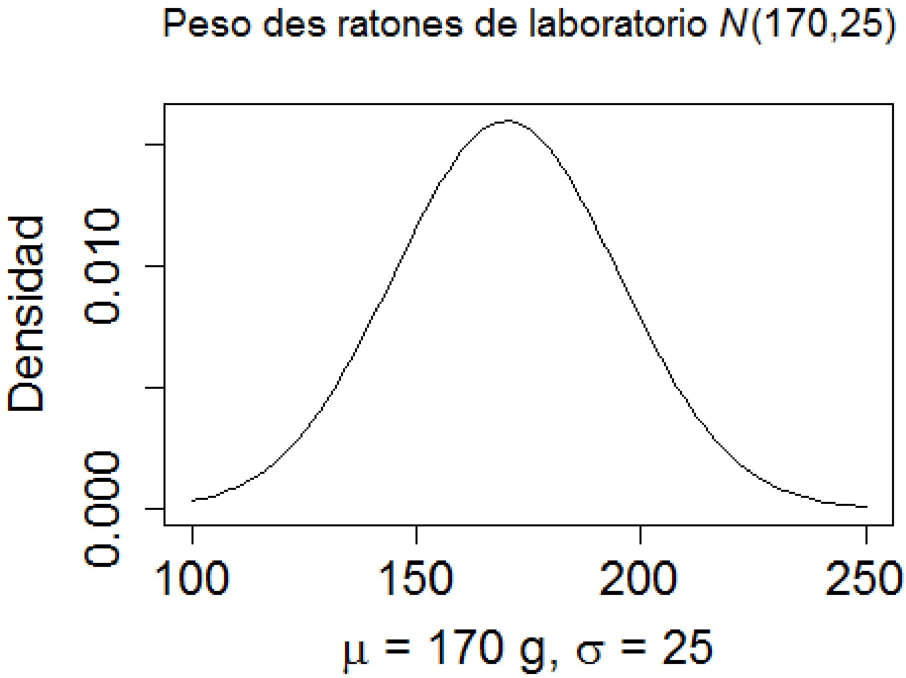
29/12/2017

Estadistica descriptiva y regresion lineal

Estad?stica descriptiva

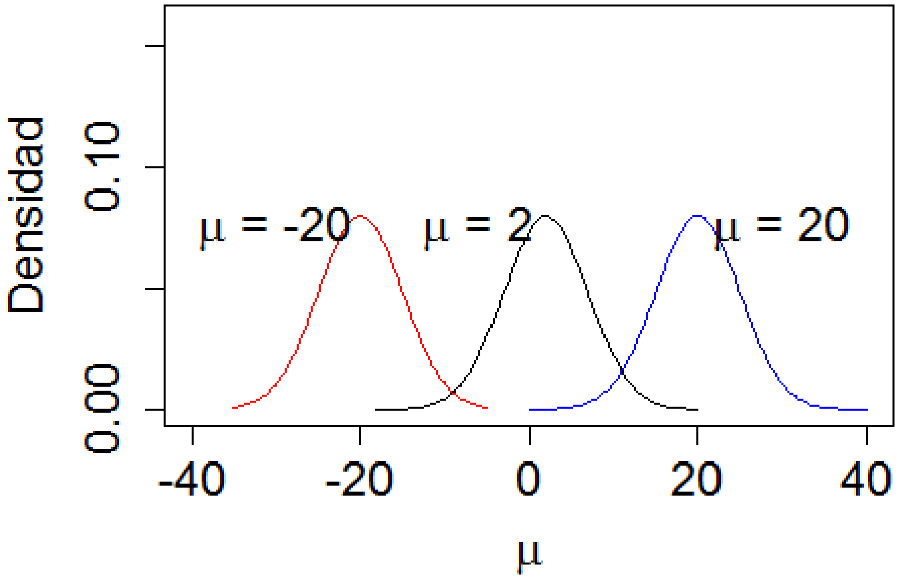
```
x<-seq(131,215,0.1)
plot(x=0,y=0,ylim=c(0,0.016),xlim=c(100,250),xlab=expression(paste(italic
(mu), " = 170 g, ", italic(sigma), " = 25")),ylab="Densidad", type="n",
cex.lab=1.5,cex.axis=1.5,main=expression(paste("Peso des ratones de
laboratorio ", paste(italic(N), "(170,25)"))))
curve(dnorm(x, mean=170, sd=25),100,250,
ylim=c(0,0.16),xlab=expression(paste(mu, " = 170", sigma, " = 25")),
ylab="Densidad", add=TRUE)
```



La distribucion normal: la media determina la posición

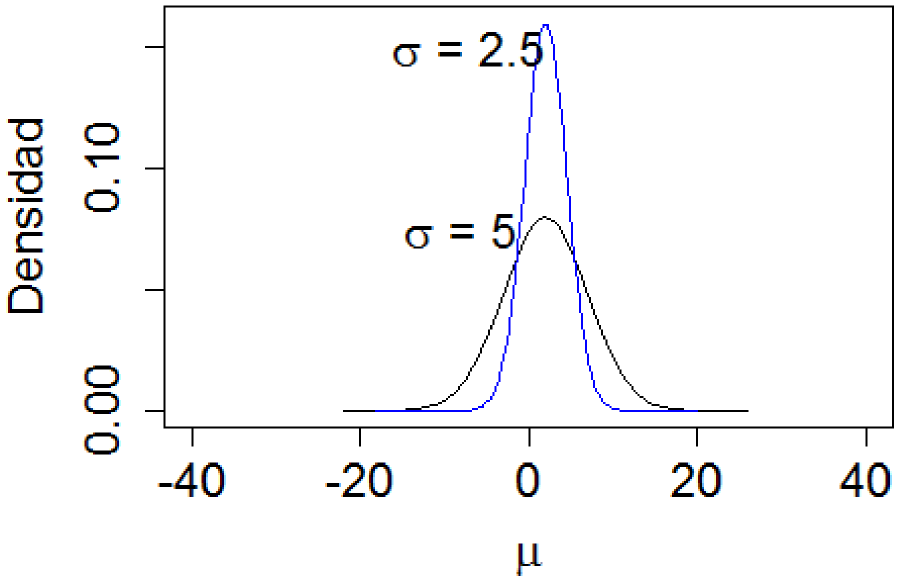
```
x<-seq(-10,10,0.1)
plot(x=0,y=0,ylim=c(0,0.16),xlim=c(-
40,40),xlab=expression(italic(mu)),ylab="Densidad",cex.lab=1.5,
cex.axis=1.5, type="n")
```

```
curve(dnorm(x, mean=2, sd=5),-18,20, add=TRUE)
text(-6,0.075, expression(paste(mu, " = 2")), cex=1.5)
curve(dnorm(x, mean=20, sd=5),0,40,
ylim=c(0,0.16),xlab=expression(paste(mu, " = 20")),
ylab="Densidad",cex.lab=1.5,cex.axis=1.5, add=TRUE, col="blue")
text(30,0.075, expression(paste(mu, " = 20")), cex=1.5)
curve(dnorm(x, mean=-20, sd=5),-35,-5, add=TRUE, col="red")
text(-30,0.075, expression(paste(mu, " = -20")), cex=1.5)
```



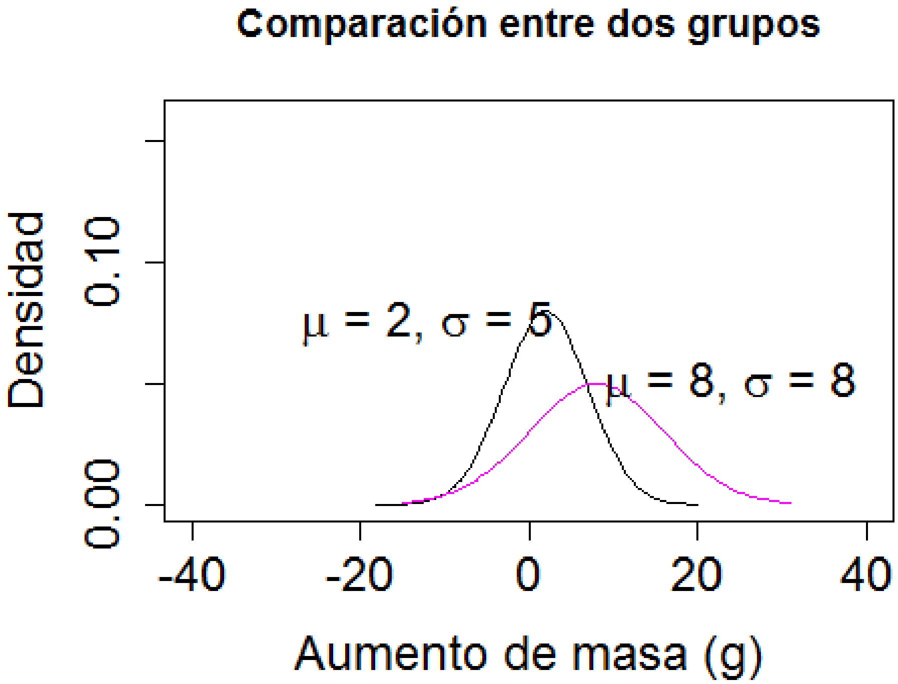
La distribucion normal: la varianza determina la forma

```
x<-seq(-10,10,0.1)
plot(x=0,y=0,ylim=c(0,0.16),xlim=c(-
40,40),xlab=expression(italic(mu)),ylab="Densidad",cex.lab=1.5,
cex.axis=1.5, type="n")
curve(dnorm(x, mean=2, sd=5),-22,26, add=TRUE)
text(-8,0.075, expression(paste(sigma, " = 5")), cex=1.5)
x<-seq(-10,10,0.1)
curve(dnorm(x, mean=2, sd=2.5),-18,20, ylim=c(0,0.16), col="blue",
add=TRUE)
text(-7,0.15, expression(paste(sigma, " = 2.5")), cex=1.5)
```



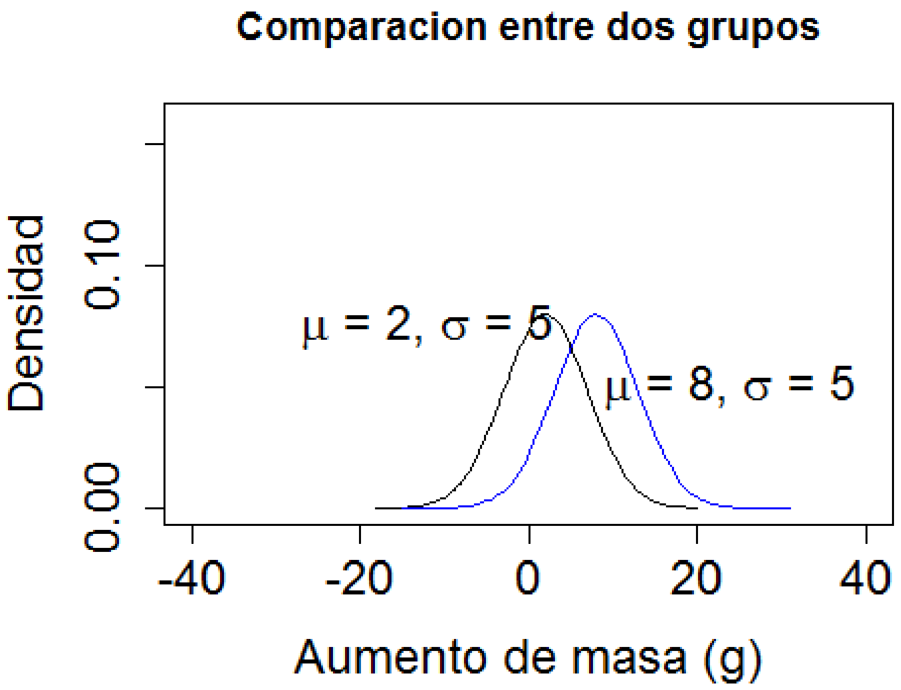
Comparar dos muestras con varianzas distintas

```
x<-seq(-10,10,0.1)
plot(x=0,y=0,ylim=c(0,0.16),xlim=c(-40,40),xlab="Aumento de masa
(g)",ylab="Densidad",cex.lab=1.5, cex.axis=1.5, type="n",
main="Comparación entre dos grupos")
##abline(v=2,lty=2, lwd=3)
curve(dnorm(x, mean=2, sd=5),-18,20, add=TRUE)
text(-12,0.075, expression(paste(mu, " = 2, ", sigma, " = 5")), cex=1.5)
curve(dnorm(x, mean=8, sd=8),-15,31, add=TRUE, col="magenta")
text(24,0.05, expression(paste(mu, " = 8, ", sigma, " = 8")), cex=1.5)
```



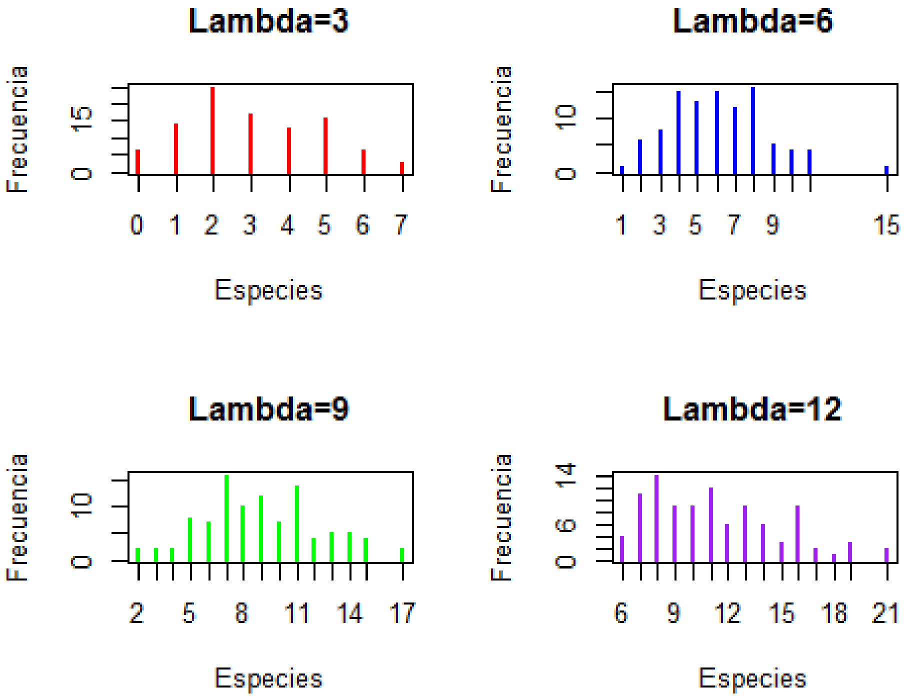
Comparar dos muestras con misma varianza

```
x<-seq(-10,10,0.1)
plot(x=0,y=0,ylim=c(0,0.16),xlim=c(-40,40),xlab="Aumento de masa
(g)",ylab="Densidad",cex.lab=1.5, cex.axis=1.5, type="n",
main="Comparacion entre dos grupos")
curve(dnorm(x, mean=2, sd=5),-18,20, add=TRUE)
text(-12,0.075, expression(paste(mu, " = 2, ", sigma, " = 5")), cex=1.5)
curve(dnorm(x, mean=8, sd=5),-15,31, add=TRUE, col="blue")
text(24,0.05, expression(paste(mu, " = 8, ", sigma, " = 5")), cex=1.5)
```



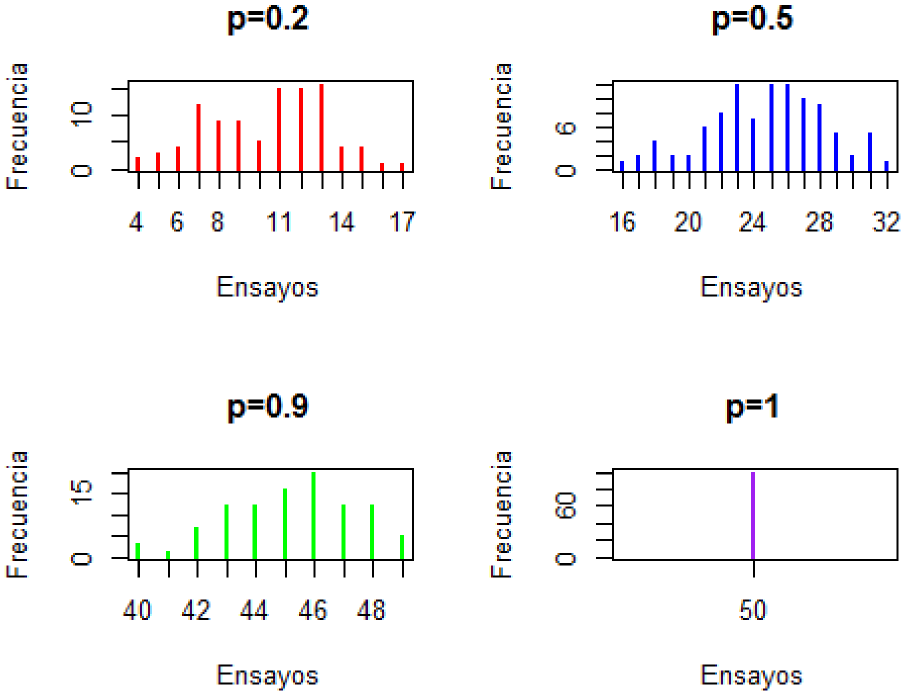
Distribucion Poisson

```
x3<-rpois(100, lambda=3)
x6<-rpois(100, lambda=6)
x9<-rpois(100, lambda=9)
x12<-rpois(100, lambda=12)
data3<-table(x3)
data6 <- table(x6)
data9 <- table(x9)
data12 <- table(x12)
par(mfrow=c(2,2))
plot(data3, ylab="Frecuencia", xlab="Especies", col="red",
main="Lambda=3")
plot(data6, ylab="Frecuencia", xlab="Especies",
col="blue",main="Lambda=6")
plot(data9, ylab="Frecuencia", xlab="Especies",
col="green",main="Lambda=9")
plot(data12, ylab="Frecuencia", xlab="Especies",
col="purple",main="Lambda=12")
```



Distribucion Binomial

```
x02<-rbinom(100,50,0.2)
x05<-rbinom(100,50,0.5)
x09<-rbinom(100,50,0.9)
x10<-rbinom(100,50,1)
data02<-table(x02)
data05 <- table(x05)
data09 <- table(x09)
data10 <- table(x10)
par(mfrow=c(2,2))
plot(data02, ylab="Frecuencia", xlab="Ensayos", col="red", main="p=0.2")
plot(data05, ylab="Frecuencia", xlab="Ensayos", col="blue",main="p=0.5")
plot(data09, ylab="Frecuencia", xlab="Ensayos", col="green",main="p=0.9")
plot(data10, ylab="Frecuencia", xlab="Ensayos", col="purple",main="p=1")
```


p=0.2
Frecuencia
0
10
4
6
8
11
14
17
Ensayos
p=0.5
Frecuencia
0
6
16
20
24
28
32
Ensayos
p=0.9
Frecuencia
0
15
40
42
44
46
48
Ensayos
p=1
Frecuencia
0
60
50
Ensayos