

## Tarea 6

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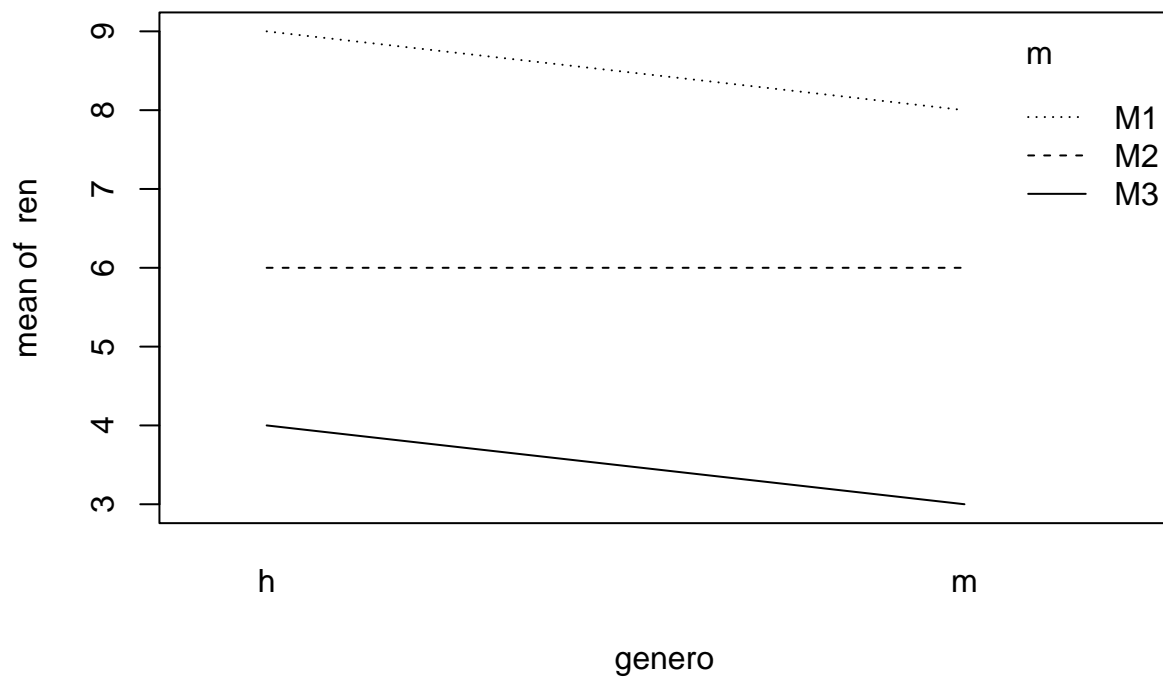
2023-09-03

```
ren=c(10,7,9,9,9,10,5,7,6,6,8,4,2,6,3,
5,5,3,9,7,8,8,10,6,8,3,5,6,7,7,2,6,2,1,4,3)
m=c(rep("M1",6),rep("M2",6),rep("M3",6),rep("M1",6),rep("M2",6),rep("M3",6))
genero = c(rep("h", 18), rep("m",18))
m = factor(m)
genero = factor(genero)
```

```
A = aov(ren~m*genero)
summary(A)
```

```
##           Df Sum Sq Mean Sq F value    Pr(>F)
## m           2     150    75.00  32.143 3.47e-08 ***
## genero       1         4     4.00   1.714   0.200
## m:genero      2         2     1.00   0.429   0.655
## Residuals   30         70     2.33
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
interaction.plot(genero, m,ren)
```



```
X=aov(ren~m+genero)
summary(X)
```

```
##           Df Sum Sq Mean Sq F value    Pr(>F)
## m           2    150   75.00  33.333 1.5e-08 ***
## genero      1     4    4.00   1.778  0.192
## Residuals  32     72   2.25
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
t = tapply(ren,genero,mean)
s = tapply(ren,genero, sd)
n = tapply(ren,genero,length)
sm = s/sqrt(n)
3
```

```
## [1] 3
```

```
E=abs(qt(0.025,n-1))*sm
Infe= t-E
Supe = t+E
```

```
print(Infe)
```

```
##           h           m  
## 5.103347 4.356505
```

```
print(Supe)
```

```
##           h           m  
## 7.563320 6.976828
```

```
tapply(ren,genero,mean)
```

```
##           h           m  
## 6.333333 5.666667
```

```
tapply(ren,m,mean)
```

```
## M1 M2 M3  
## 8.5 6.0 3.5
```

```
C = aov(ren~m)  
summary(C)
```

```
##           Df Sum Sq Mean Sq F value    Pr(>F)  
## m           2    150    75.0    32.57 1.55e-08 ***  
## Residuals   33     76     2.3  
## ---  
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

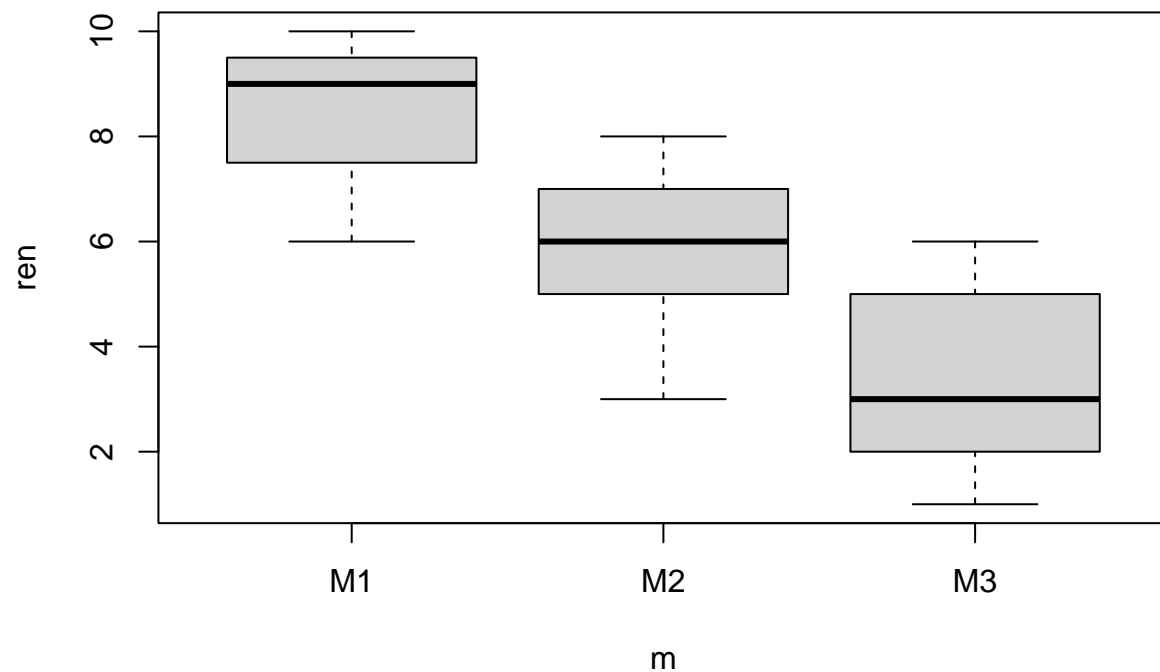
```
tapply(ren,m,mean)
```

```
## M1 M2 M3  
## 8.5 6.0 3.5
```

```
mean(ren)
```

```
## [1] 6
```

```
boxplot(ren ~ m)
```



```
I = TukeyHSD(aov(ren ~ m))
I
```

```
## Tukey multiple comparisons of means
## 95% family-wise confidence level
##
## Fit: aov(formula = ren ~ m)
##
## $m
##      diff      lwr      upr    p adj
## M2-M1 -2.5 -4.020241 -0.9797592 0.0008674
## M3-M1 -5.0 -6.520241 -3.4797592 0.0000000
## M3-M2 -2.5 -4.020241 -0.9797592 0.0008674
```

```
plot(lm(ren~m))
```

