Compte rendu TP R GL3

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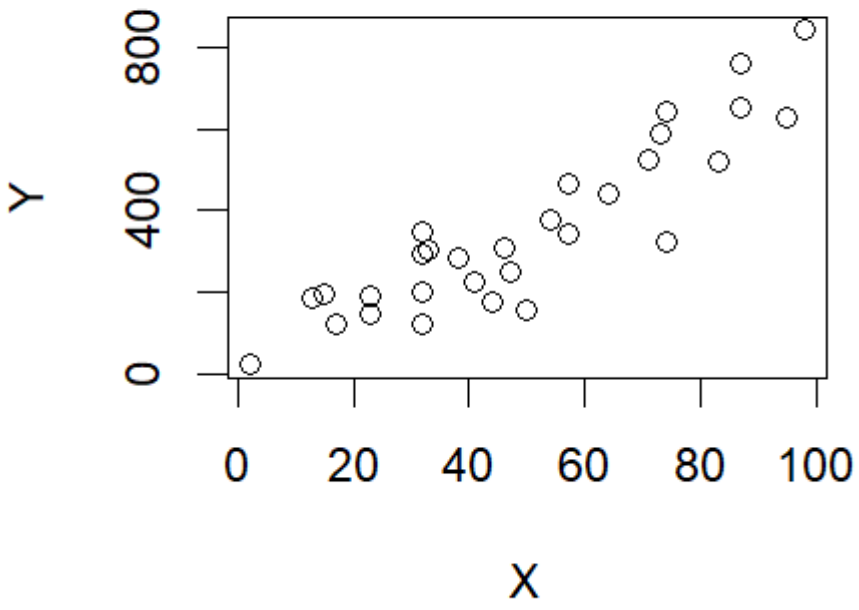
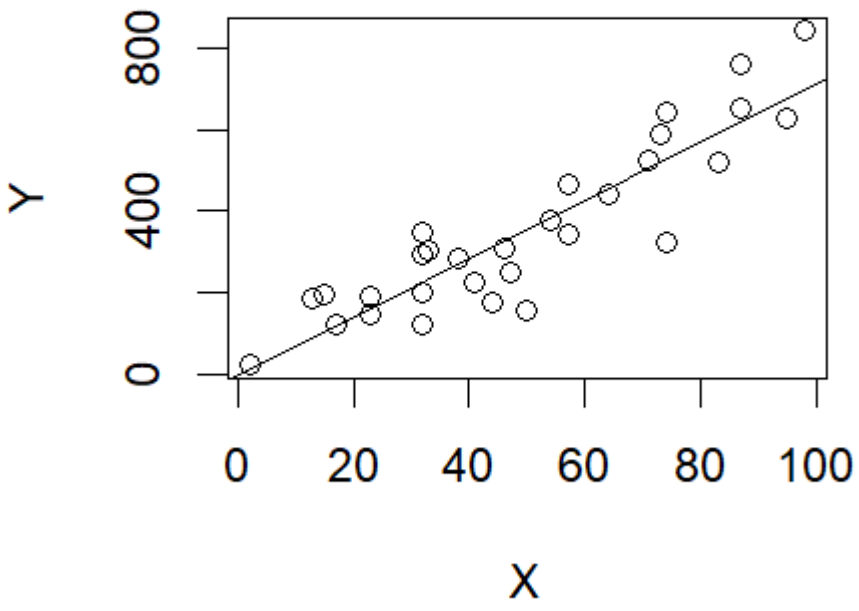
Question1+2:

```
> x=1:100
> X=sample(x,30,replace=T)
> Y=7*X+3+rnorm(30,0,100)
> plot(X,Y)
```



Question3+4:

```
> regXY=lm(Y~X)
> abline(regXY$coefficients)
```



Question5:

```
> anovXY=anova(regXY)
```

If we want to see the output :

```
> anova(regXY)
Analysis of Variance Table

Response: Y
          Df  Sum Sq Mean Sq F value    Pr(>F)
X          1 1011691 1011691  118.83 1.386e-11 ***
Residuals 28  238382    8514
```

Question6:

```
> df<-data.frame(X,Y)
```

```
> fss<-sum((fitted(regXY)-mean(df$Y))^2)
> fss
[1] 1011691
> rss<-sum((fitted(regXY)-df$Y)^2)
> rss
[1] 238381.5
```

```
> mfss<-mean(fss)
> mfss
[1] 1011691
> mrss<-mean(rss)
> mrss
[1] 238381.5
```

Question7:

```
> confint(regXY,0.05)
                2.5 %    97.5 %
(Intercept) -75.524210 74.703799
X             5.789901  8.469356
```

Question8:

1-Calculate the mean

2-Calculate the standard error of the mean

3-Find the t-score that corresponds to the confidence level

4-Calculate the margin of error and construct the confidence interval

Question9:

```
> varnew<-data.frame(X=c(500))
> predict(regXY,newdata = varnew)
       1
3564.404
```