

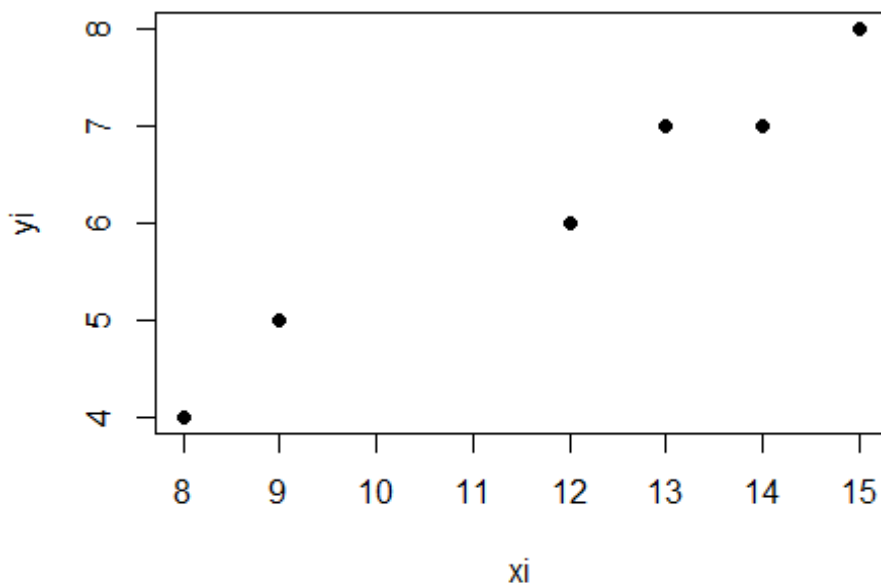
Ejercicios_de_regresion.R

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```
# Ejercicios de regresión  
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# 14.04.2021
```

```
xi <- c(15,14,13,12,9,8)  
yi <- c(8,7,7,6,5,4)  
plot(xi,yi,pch=16)
```

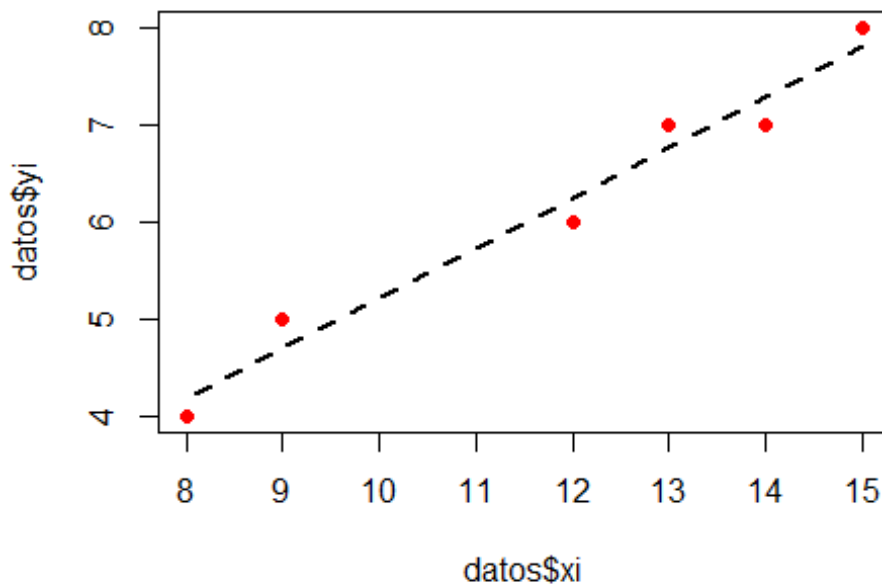


```
datos <- data.frame(xi,yi)  
datos$xi_m <- round(datos$xi-mean(datos$xi),2)  
datos$yi_m <- round(datos$yi-mean(datos$yi),2)  
datos$xiyi_m <- round(datos$xi_m*datos$yi_m,2)  
datos$xi_m2 <- round(datos$xi_m^2,2)  
beta <- sum(datos$xiyi_m)/sum(datos$xi_m2)  
alfa <- mean(datos$yi)-beta*mean(datos$xi)  
datos$yprima <- round(alfa + beta*datos$xi,2)
```

```

datos$di <- c(8.5,10.3,11.4,12.5,13.6,14.3)
datos$yprima2 <- round(alfa + beta*datos$di,2)
plot(datos$xi, datos$yi, pch=16, col = "red")
lines(datos$xi, datos$yprima, type="l", lty=2, lwd=2)

```



```

diam.lm <- lm(datos$yi ~ datos$xi)
diam.lm

##
## Call:
## lm(formula = datos$yi ~ datos$xi)
##
## Coefficients:
## (Intercept)      datos$xi
##      0.02146      0.51931

summary(diam.lm)

##
## Call:
## lm(formula = datos$yi ~ datos$xi)
##
## Residuals:
##      1      2      3      4      5      6
## 0.1888 -0.2918  0.2275 -0.2532  0.3047 -0.1760
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)

```

```

## (Intercept)  0.02146    0.58311    0.037    0.97241
## datos$xi     0.51931    0.04818   10.780    0.00042 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.3002 on 4 degrees of freedom
## Multiple R-squared:  0.9667, Adjusted R-squared:  0.9584
## F-statistic: 116.2 on 1 and 4 DF,  p-value: 0.00042

diam.lm$fitted.values

##          1          2          3          4          5          6
## 7.811159 7.291845 6.772532 6.253219 4.695279 4.175966

sum(diam.lm$residuals)

## [1] 5.551115e-17

cor.test(datos$xi, datos$yi)

##
## Pearson's product-moment correlation
##
## data:  datos$xi and datos$yi
## t = 10.78, df = 4, p-value = 0.00042
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  0.8495576 0.9982413
## sample estimates:
##          cor
## 0.9832201

plot(datos$xi, datos$yi,col="purple", pch=16)
abline(diam.lm, col= "blue")

```

