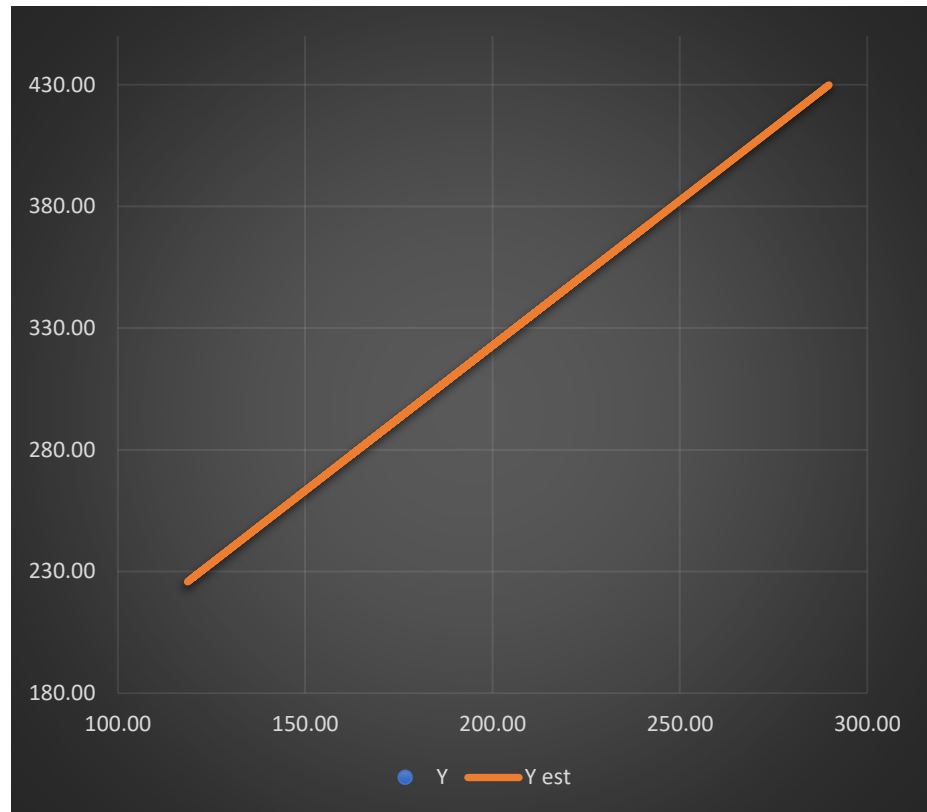


a) Dibuje un diagrama de dispersión (X, Y) con “Y” estimada por una recta de regresión.

| X | Y |
|--------|--------|
| 218.90 | 325.09 |
| 213.50 | 359.77 |
| 175.20 | 312.59 |
| 165.40 | 315.51 |
| 242.00 | 433.91 |
| 120.00 | 247.64 |
| 196.20 | 329.40 |
| 192.60 | 326.67 |
| 166.50 | 256.41 |
| 226.10 | 358.18 |
| 163.00 | 224.90 |
| 183.40 | 300.09 |
| 289.80 | 403.04 |
| 161.90 | 278.57 |
| 219.80 | 334.08 |
| 188.50 | 313.42 |
| 184.00 | 324.33 |
| 118.60 | 201.40 |
| 223.20 | 307.82 |



b) Ajuste un Modelo Lineal Simple.

Se puede ajustar por medio de dos métodos:

1) Por medio de la función LINEST ()

=LINEST(D8:D26,C8:C26) 1.192435 84.32104

2) Realizando todos los cálculos necesarios para calcular los estimadores.

Recordando que los estimadores pueden ser calculados con las fórmulas:

$$\hat{\alpha} = \frac{\sum_{i=1}^n Y_i \sum_{i=1}^n X_i^2 - \sum_{i=1}^n X_i \sum_{i=1}^n X_i Y_i}{n \sum_{i=1}^n X_i^2 - \left(\sum_{i=1}^n X_i \right)^2}$$

$$\hat{\beta} = \frac{n \sum_{i=1}^n X_i Y_i - \sum_{i=1}^n X_i \sum_{i=1}^n Y_i}{n \sum_{i=1}^n X_i^2 - \left(\sum_{i=1}^n X_i \right)^2}$$

Y teniendo a nuestra disposición la siguiente información:

| No | X | Y | XY | X ² |
|-------------|----------------|----------------|-------------------|------------------|
| 1.00 | 218.90 | 325.09 | 71162.20 | 47917.21 |
| 2.00 | 213.50 | 359.77 | 76810.90 | 45582.25 |
| 3.00 | 175.20 | 312.59 | 54765.77 | 30695.04 |
| 4.00 | 165.40 | 315.51 | 52185.35 | 27357.16 |
| 5.00 | 242.00 | 433.91 | 105006.22 | 58564.00 |
| 6.00 | 120.00 | 247.64 | 29716.80 | 14400.00 |
| 7.00 | 196.20 | 329.40 | 64628.28 | 38494.44 |
| 8.00 | 192.60 | 326.67 | 62916.64 | 37094.76 |
| 9.00 | 166.50 | 256.41 | 42692.27 | 27722.25 |
| 10.00 | 226.10 | 358.18 | 80984.50 | 51121.21 |
| 11.00 | 163.00 | 224.90 | 36658.70 | 26569.00 |
| 12.00 | 183.40 | 300.09 | 55036.51 | 33635.56 |
| 13.00 | 289.80 | 403.04 | 116800.99 | 83984.04 |
| 14.00 | 161.90 | 278.57 | 45100.48 | 26211.61 |
| 15.00 | 219.80 | 334.08 | 73430.78 | 48312.04 |
| 16.00 | 188.50 | 313.42 | 59079.67 | 35532.25 |
| 17.00 | 184.00 | 324.33 | 59676.72 | 33856.00 |
| 18.00 | 118.60 | 201.40 | 23886.04 | 14065.96 |
| 19.00 | 223.20 | 307.82 | 68705.42 | 49818.24 |
| Suma | 3648.60 | 5952.82 | 1179244.24 | 730933.02 |

Se obtiene que:

$$\hat{\alpha} = 84.32104$$

$$\hat{\beta} = 1.192435$$

c) Obtenga los residuales, suma de residuales y sus cuadrados.

| No | X | Y | XY | X ² | Y est | e | e ² |
|-------|---------|---------|------------|----------------|---------|--------|----------------|
| 1.00 | 218.90 | 325.09 | 71162.20 | 47917.21 | 345.35 | -20.26 | 410.27 |
| 2.00 | 213.50 | 359.77 | 76810.90 | 45582.25 | 338.91 | 20.86 | 435.31 |
| 3.00 | 175.20 | 312.59 | 54765.77 | 30695.04 | 293.24 | 19.35 | 374.59 |
| 4.00 | 165.40 | 315.51 | 52185.35 | 27357.16 | 281.55 | 33.96 | 1153.29 |
| 5.00 | 242.00 | 433.91 | 105006.22 | 58564.00 | 372.89 | 61.02 | 3723.39 |
| 6.00 | 120.00 | 247.64 | 29716.80 | 14400.00 | 227.41 | 20.23 | 409.12 |
| 7.00 | 196.20 | 329.40 | 64628.28 | 38494.44 | 318.28 | 11.12 | 123.72 |
| 8.00 | 192.60 | 326.67 | 62916.64 | 37094.76 | 313.98 | 12.69 | 160.93 |
| 9.00 | 166.50 | 256.41 | 42692.27 | 27722.25 | 282.86 | -26.45 | 699.68 |
| 10.00 | 226.10 | 358.18 | 80984.50 | 51121.21 | 353.93 | 4.25 | 18.06 |
| 11.00 | 163.00 | 224.90 | 36658.70 | 26569.00 | 278.69 | -53.79 | 2893.15 |
| 12.00 | 183.40 | 300.09 | 55036.51 | 33635.56 | 303.01 | -2.92 | 8.55 |
| 13.00 | 289.80 | 403.04 | 116800.99 | 83984.04 | 429.89 | -26.85 | 720.86 |
| 14.00 | 161.90 | 278.57 | 45100.48 | 26211.61 | 277.38 | 1.19 | 1.42 |
| 15.00 | 219.80 | 334.08 | 73430.78 | 48312.04 | 346.42 | -12.34 | 152.24 |
| 16.00 | 188.50 | 313.42 | 59079.67 | 35532.25 | 309.10 | 4.32 | 18.70 |
| 17.00 | 184.00 | 324.33 | 59676.72 | 33856.00 | 303.73 | 20.60 | 424.39 |
| 18.00 | 118.60 | 201.40 | 23886.04 | 14065.96 | 225.74 | -24.34 | 592.63 |
| 19.00 | 223.20 | 307.82 | 68705.42 | 49818.24 | 350.47 | -42.65 | 1819.25 |
| Suma | 3648.60 | 5952.82 | 1179244.24 | 730933.02 | 5952.82 | 0.00 | 14139.55 |