

Ex:-> Calculate the correlation co-efficient and obtain the ~~least square regression~~ lines of regression for the following data.

x : 1 2 3 4 5 6 7 8 9

y : 9 8 10 12 11 13 14 16 15

Also estimate the value of y when

$$x = 6.2$$

Solⁿ First of all we need to find the co-efficient of correlation.

By ~~the~~ the previous method, we can find $r_{xy} = 0.95$ [All of you verify this]

$$\sigma_x = \sqrt{\frac{1}{n} \sum x_i^2 - \bar{x}^2}$$

$$\text{and } \sigma_y = \sqrt{\frac{1}{n} \sum y_i^2 - \bar{y}^2}$$

Use this two formula to find

$$\frac{r_{xy}}{\sigma_x} = b_{yx} \quad [\text{Use change of scale and origin}]$$

Then, the line of regression of y on x is,

$$y - \bar{y} = b_{yx} (x - \bar{x})$$

put the values, you can find the line of regression.

Next, if you put $x = 6.2$, then you can find the value of y.