$$x \quad y \qquad x \quad y \qquad x \quad y$$

$$(3, 2) \quad (3, 3) \quad (6, 4) \qquad \text{To find out correlation}$$

$x \rightarrow 3, 3, 6$

$y \rightarrow 2, 3, 4$

$$\left(\frac{1}{n-1}\right)\left(\frac{\sum_x \sum_y (x-\bar{x})(y-\bar{y})}{S_x S_y}\right)$$

$$S_x = \sqrt{\frac{\sum (x-\bar{x})^2}{n-1}}$$

$\Rightarrow$

$std = \sqrt{variance}$

→ first step calculate the mean of x & y

$$\text{Mean of } x = \frac{3+3+6}{3} = \frac{12}{3} = 4$$

$$\text{"} \quad \text{"} \quad y = \frac{2+3+4}{3} = \frac{9}{3} = 3$$

→ find out the std. deviations ⟹ $S_x = 1.73$

$S_y = 1.00$

→ Then based on the std. deviations, we find out the differences, then as $n = 3$, we multiply out the differences, then as $n = 3$, we multiply

$$(3-4)(2-3) \; ; \; (3-4)(3-\tfrac{3}{4}) \; ; \; (6-4)(4-3)$$

$$+1 \qquad\qquad 0 \qquad\qquad 2$$

→ Add them $= 3$

Divide by S_x & S_y $\qquad \dfrac{3}{1.73 \times 1} = 3$

$$\downarrow \qquad \downarrow$$
$$S_x \qquad S_y$$

$$= 1.73$$

Now divide above result by $(3-1) = 2 \rightarrow$ variables

$$= \dfrac{1.73}{2} = 0.86 \checkmark$$