

1.	X	Y
	2	17
	4	30
	7	41
	11	44

$$\textcircled{1} \bar{X} = \frac{2+4+7+11}{4}$$

$$\bar{X} = \frac{24}{4}$$

$$\bar{X} = 6$$

$$\textcircled{2} \bar{Y} = \frac{17+30+41+44}{4}$$

$$= \frac{132}{4}$$

$$\bar{Y} = 33$$

③ FIND  $S_x$

X	X - $\bar{X}$	(X - $\bar{X}$ ) <sup>2</sup>
2	2 - 6 = -4	(-4) <sup>2</sup> = 16
4	4 - 6 = -2	(-2) <sup>2</sup> = 4
7	7 - 6 = 1	1 <sup>2</sup> = 1
11	11 - 6 = 5	5 <sup>2</sup> = 25

$$\sum (X - \bar{X})^2 = 46$$

$$S_x = \sqrt{\frac{\sum (X - \bar{X})^2}{n-1}} = \sqrt{\frac{46}{4-1}} = 3.91578$$

$$\bar{X} = 6$$

④ FIND  $S_y$

Y	Y - $\bar{Y}$	(Y - $\bar{Y}$ ) <sup>2</sup>
17	17 - 33 = -16	(-16) <sup>2</sup> = 256
30	30 - 33 = -3	(-3) <sup>2</sup> = 9
41	41 - 33 = 8	(8) <sup>2</sup> = 64
44	44 - 33 = 11	(11) <sup>2</sup> = 121

$$\sum (Y - \bar{Y})^2 = 450$$

$$S_y = \sqrt{\frac{\sum (Y - \bar{Y})^2}{n-1}} = \sqrt{\frac{450}{4-1}} = 12.24745$$

$$\bar{Y} = 33$$

⑤

X	Y	$\left(\frac{X - \bar{X}}{S_x}\right) \left(\frac{Y - \bar{Y}}{S_y}\right)$
2	17	$\left(\frac{2-6}{3.91578}\right) \left(\frac{17-33}{12.24745}\right) = 1.33449$
4	30	$\left(\frac{4-6}{3.91578}\right) \left(\frac{30-33}{12.24745}\right) = .12511$
7	41	$\left(\frac{7-6}{3.91578}\right) \left(\frac{41-33}{12.24745}\right) = .16681$
11	44	$\left(\frac{11-6}{3.91578}\right) \left(\frac{44-33}{12.24745}\right) = 1.14683$

$$r = \frac{\sum}{n-1}$$

$$= \frac{2.77324}{4-1}$$

$$r = 0.9244$$

$$\sum = 2.77324$$

$$R^2 = r^2$$

$$= (0.9244133333)^2$$

$$= 0.8545$$