Derive all this in excel, switch to forLecture3lecture.xls

	GDP/cap (PPP$ 1000)	CO2/cap (tons)							
	x	y	(x-xbar)	(y-ybar)	(x-xbar)^2	(x-xbar)(y-ybar)	yhat	uhat^2	(y-ybar)^2
United States	43.7	19.3	18.5	10.0	342.9	184.5	14.84	19.9	99.3
Ireland	41.0	10.2	15.8	0.9	250.2	13.7	14.04	14.7	0.8
Belgium	33.5	9.7	8.3	0.4	69.2	3.0	11.81	4.4	0.1
Korea, Rep.	25.0	10.4	-0.2	1.1	0.0	-0.2	9.28	1.3	1.1
India	2.7	1.4	-22.5	-7.9	505.5	178.4	2.65	1.6	62.9
China	5.2	5.0	-20.0	-4.3	399.3	86.6	3.39	2.6	18.8
Sum	151.1 /6	56.0 /6	0.0	0.0	1567.1 /5	466.1 /5	56.0	44.5	183.1
Sample mean	25.2	9.3	0.0	0.0					
Sample variance/covariance					313.4	93.2			

$$\frac{\sum x}{N} = \bar{x}$$