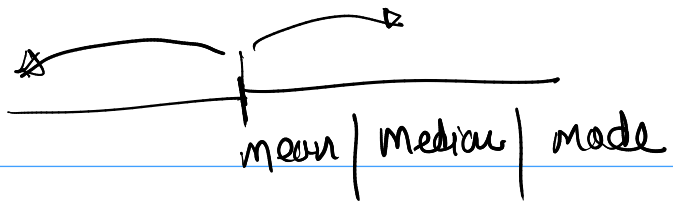


Dispersion :- Range |
Variance |
Standard deviation

Coefficient of Variation (CV)

x	y	Salary (Rs)	Experience (y)
↑	↑↓	10L	2 year
		12L	3 year
%		15L	4 year

Usecase Medical

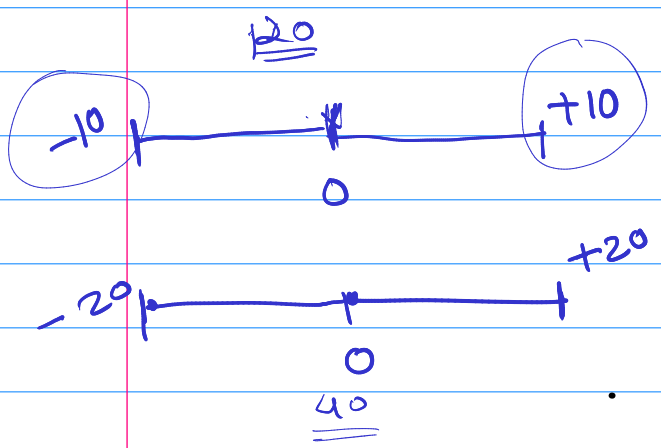
drug :- Cough syrup

Drug	kg	gm	mgm	?
	2%	2%	2%	
500	20 kg	20 gm	20 mgm	
1000	40 kg	40 gm	40 mgm	

% → The CV is the ratio of standard deviation to the mean Expressed as percentage.

$$CV = \left(\frac{\text{Standerd deviation}}{\text{mean}}\right) \times 100$$

Covariance = Range $-\infty$ to $+\infty$



mean = $\frac{-10+0+10}{3}$ = 0

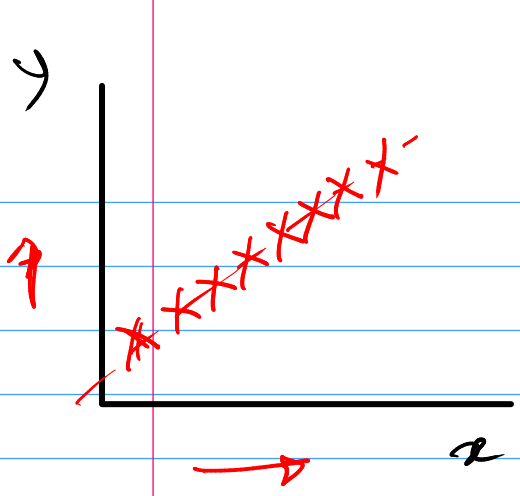
mean = $\frac{-20+0+20}{0}$ = 0

Variance = Same

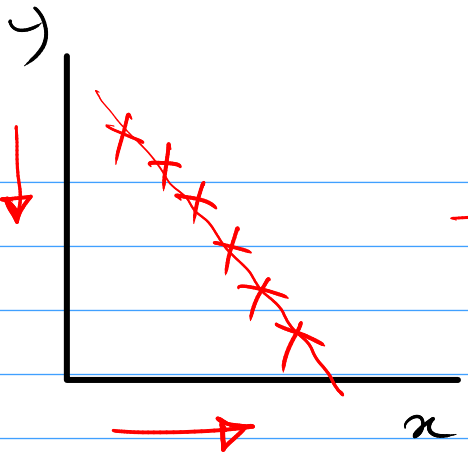
·Covariance is describe the degree to which two variables are Lineay related. It measure how much two variable change together, Such that when one variable increse dose the other increse or decrease?

disadvantage % → It give us range between $-\infty$ to $+\infty$

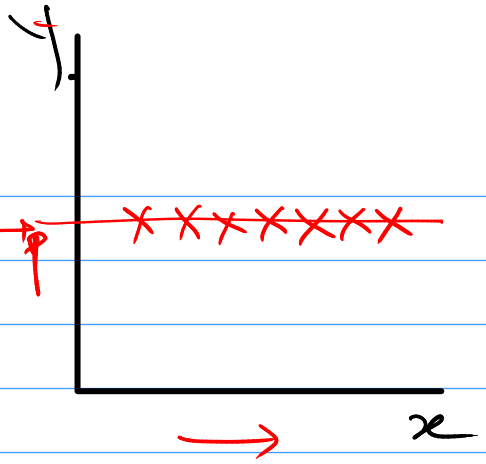
x & y = +23 A & B = +999



+ve covariance



-ve covariance.

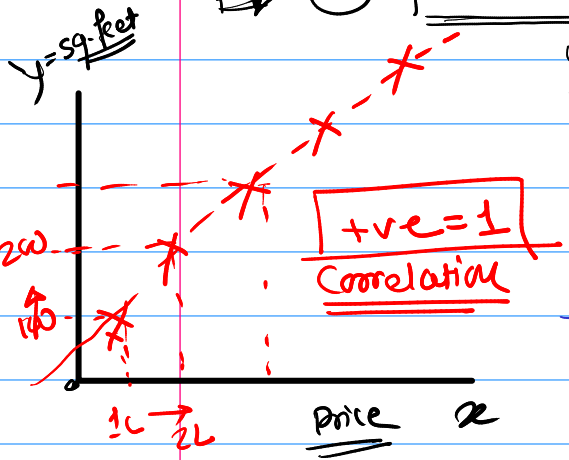


no correlation

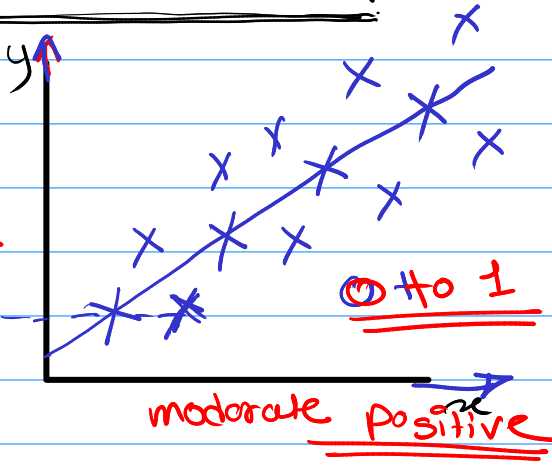
Correlation Coefficient

Range
-1 to 1

① Pearson Correlation

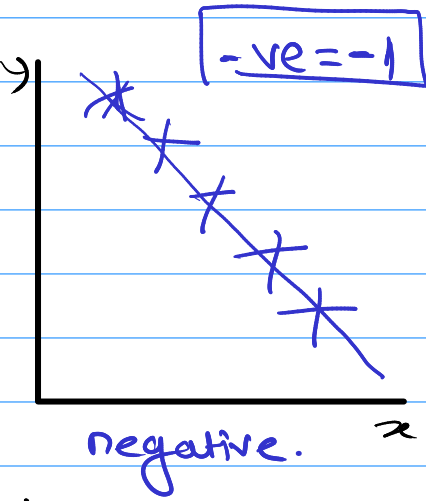


+ve=1 Correlation

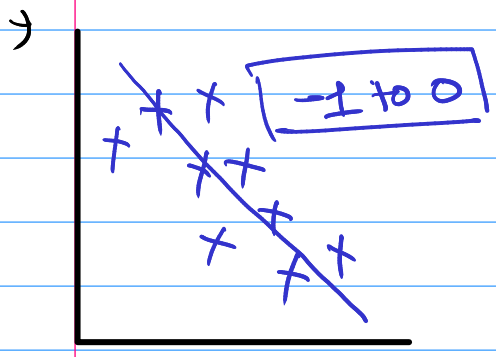


0 to 1

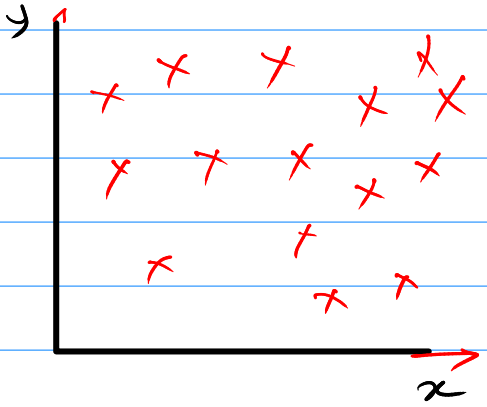
moderate positive



negative.



moderate -ve

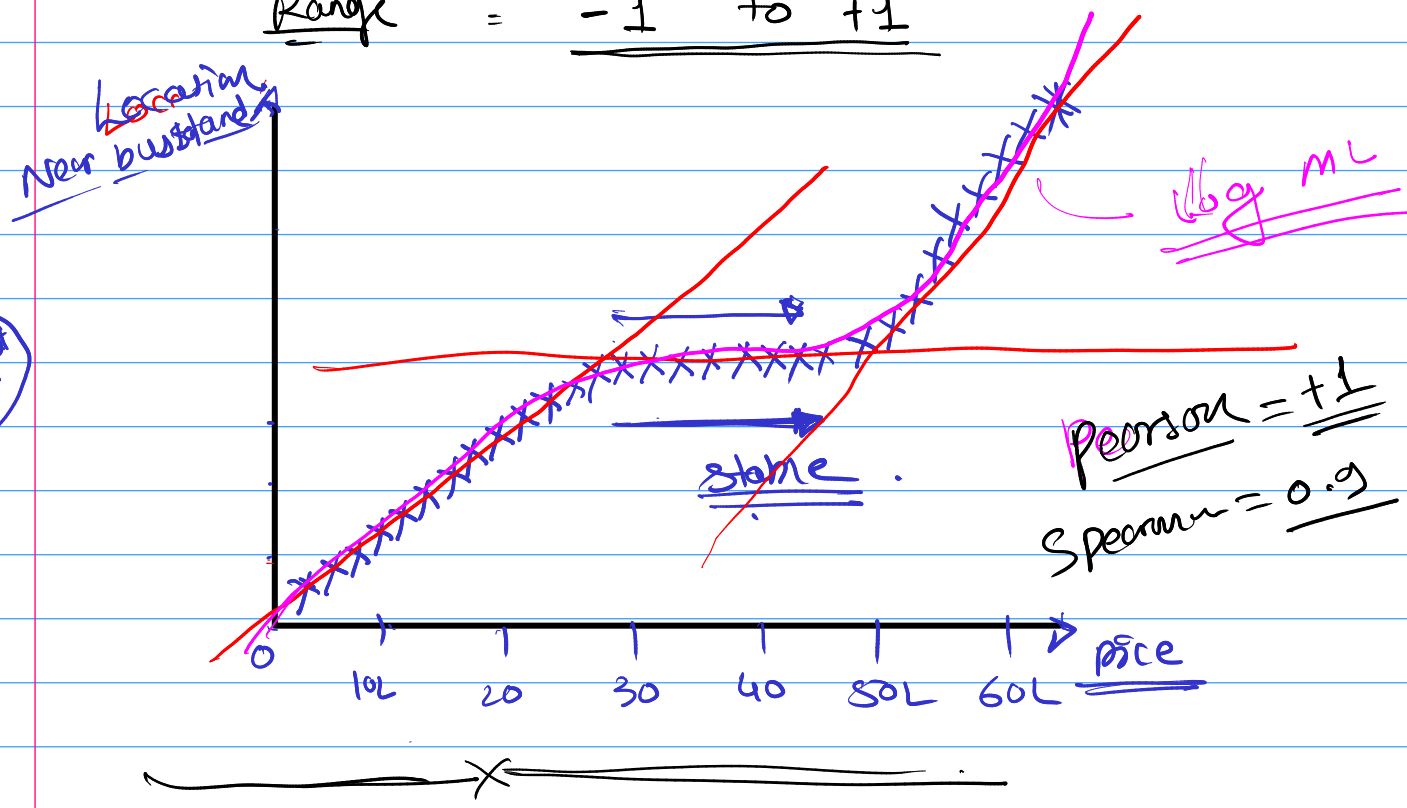


Zero Correlation

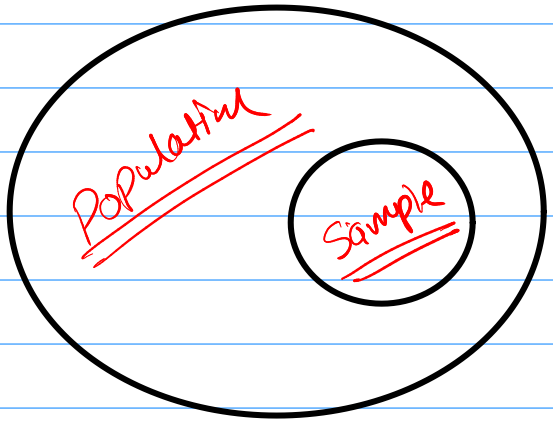
Scatter Plot.

(2) Spearman Rank Correlation

Range = -1 to +1



Sampling Technique



A = Simple Random Sampling

ex :→ you select 10 student Randomly from the classroom.

B = Stratified Sampling

:→ We select Samples based on Strategy.

ex = feedback of Ladies Mall (shop).

↳ Female (gender Strategy).

ex = Car Loan Customers.

↳ Income Range | Cibil.

C. Systematic Sampling

:→ every nth students.

↳ 1st, 5th, 10th, 15th, ----

D. Convenience Sampling.

→ Blood Camp.
Mall - Credit Card.

E. Purposive Sampling.

medical field.

→ ex.
Collection of Blood Sample in Covid 19.

→

F: Cluster Sampling.

Govt / Telecom.

Wardha Dist
Population

Wadhy
Selsu
Deoli
Hinghat