### Median

https://youtu.be/FMj2i-IvaZU

# Prerequisites

- 。 (4.1) Mean
- 2) Introduction to Measure of Central Tendency- Mean, Median, Mode
- 1) Representation of Data in Statistics-Ungrouped, Grouped Data
   Distribution(Discrete & Continuous)

### What is Median?

It is a value separating higher half with the lower half of data sample, a population, or probability distribution

#### OR

Middle value of dataset

### Why it is Important?

In Presence of Outliers concepts of mean, variance, standard deviation, etc get

corrupted.

## Finding Median

1. Type1 (Sequential Data)

Steps

Steps

① White data in  $1^{m_0}$  order (or  $1^{m_0}$ )

② > 4 n is odd then  $(n+1)^m$  observation will be median

> 4 n is even > the median will be

A.m. of  $(\frac{n}{2})^{n_0}$  &  $(\frac{n}{2}+1)^{n_0}$  observation.

Question 1

7,11,3,-5,12,18,17

$$\frac{h}{h} \Rightarrow -5,3,7,11,12,17,18 (\uparrow^{ing})$$
 $\rightarrow \text{ Number of observation} = 7$ 
 $\Rightarrow \text{ Odd}$ 
 $\Rightarrow \text{ median}; \left(\frac{7+1}{2}\right)^{h} \text{ observation} = 4^{h} \text{ observation}$ 
 $\Rightarrow \text{ median} = 1.1$ 

Question 2

(2) 
$$1,1,2,3,1,5,7,9,11,17$$

Median =)  $5^{+1} & 6^{-1}$  observation

=)  $\frac{3+5}{2} = 4$ 

2. Type2 (Grouped with Single Class Value)

Steps

The sum of frequency & perspect Cumulative

(2) Find sum of frequency & perspect Cumulative

freq column if  $n (=f, +f_2 + ......f_R)$  is odd then

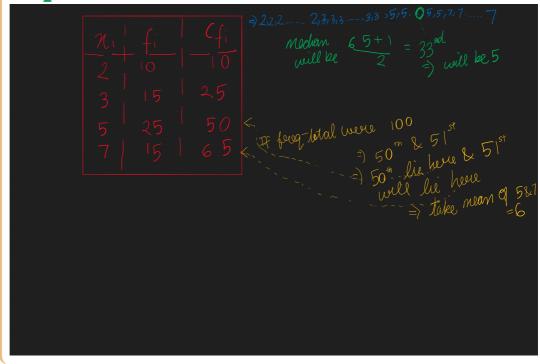
median will be value cumulative frequency of

which contains  $(n+1)^{\frac{1}{n}}$  observations.

OR

if n = even then find A.m of values (f = f) which contain (f = f) to (f = f) observations.

Explanation



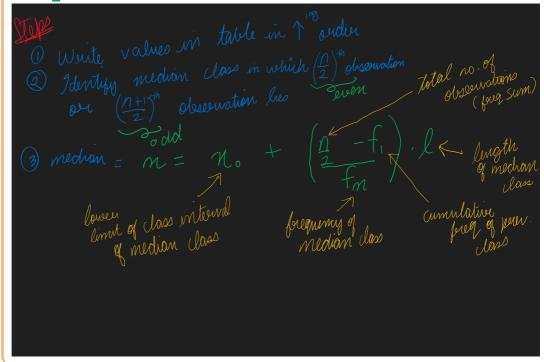
Question 1

0)	M	$+ \circ$	
	) O	5	
	20	15	
	30	16	
	40	4	

• Answer 1

3. **Type3 (Grouped with Class Value in Interval)** 

Steps



Question 1

• Answer 1