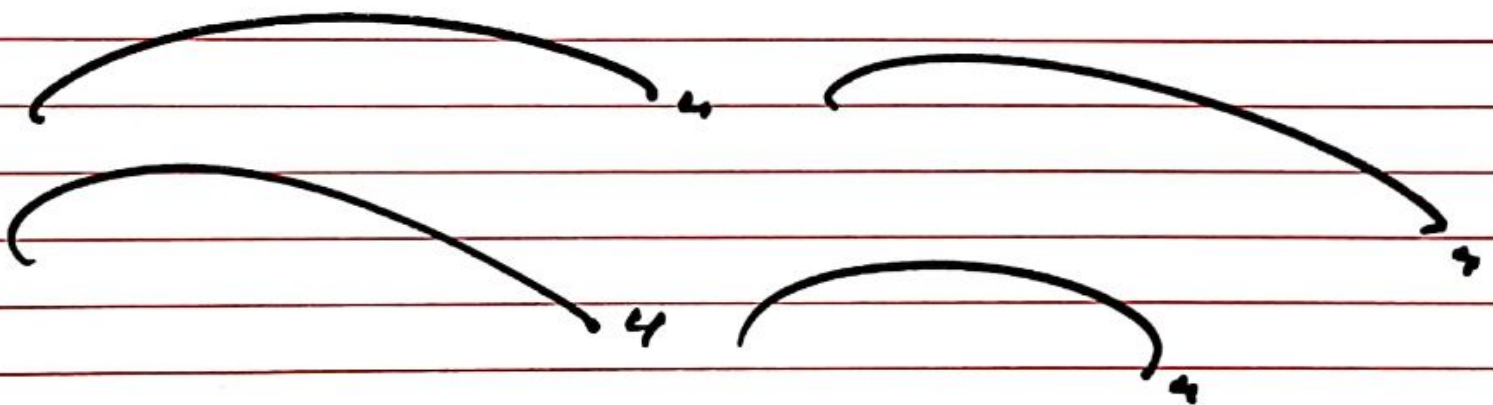


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Q. NO. 1 :-

∴ MEAN ∴

Given data:

48, 50, 68, 70, 77, 79, 89, 90, 92

$$\text{Mean} = \frac{\sum x}{n}$$

$$\text{Mean} = \frac{663}{9}$$

$$\text{Mean} = 73.66$$

∴ MEDIAN ∴

$$\text{Median} = \frac{n+1}{2}$$

$$\text{Median} = \frac{9+1}{2}$$

Median = 5th term is given data

$$\text{Median} = 77$$

when data is arranged in order from lowest to greatest

## ∴ MODE :-

Mode = 0 because there is no repetition of data in a set of given observation.

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## Q. NO # 2 :-

### :- PRESENTATION OF RESEARCH DATA :-

This refers to the organization of data into tables, graphs or charts, so that logical and statistical conclusion can be derived from the collected measurements.

Data may be presented in 3 (method)

- Textual
- Tabular
- Graphical.

### ① :- TEXTUAL PRESENTATION :-

The data gathered are presented in paragraph form.

- Data are written and read.

It is a combination of text and figures.

## 2 - TABULAR PRESENTATION:-

- Method of presenting data using the statistical table.
- A systemic organization of data in columns and rows.

## GRAPHICAL PRESENTATION:-

- 1 - Bar graph - used to show relationship comparison b/w group.
- 2 - Line graph - most useful in display data changes continuously overtime.
- 3 - Pictograph uses small identical or figure of object called isotopes to making comparisons. Each picture represent a define quantity.

Q. NO :- 3

## RELATIVE RISK:-

- Incidence in exposed individuals =

$$a / a + b$$

OR proportion of exposed people who developed the disease.

- Incidence in non-exposed individuals =

$$c / c + d$$

OR Proportion in non-exposed people who develop disease

Relative Risk =  $\frac{\text{Incidence in exposed}}{\text{Incidence in non exposed}}$

$$R.R = \frac{a / a + b}{c / c + d}$$



- can only used for data from studies with a randomly selected example eg cohort and cross sectional studies.

## -: Calculating the Relative Risk:


	CHD+	CHD-	TOTAL
Smoker	112	176	288
Non-smoker	88	224	312

$$\text{Incidence is exposed} = a/atb = 112/288 \\ = 0.38$$

$$\text{Incidence is non exposed} = c/ctd = 88/312 \\ = 0.28$$

$$RR = 0.38 / 0.28 = 1.38$$

**EXAMPLE:** You could have two groups of women one group has a mother sister or daughter who has breast cancer the other group does not have any close female relative who have had the disease.



## -∴ ODDS RATIO :-

Incidence cannot be measured in case control studies because we start with the diseased people (cases) and non diseased people (control) hence we calculate OR.

	Cases	Control	
Exposed	a	b	a+b
Non exposure	c	d	c+d
	a+c	b+d	

$$OR = a/c / b/d \text{ or } ad/bc$$



## EXAMPLE:

In: the treatment group) the odds of an events is the number of tutored students who failed a class / the number of students in the tutored group who passed all their classes.

The numerator is the same as that of probability but the denominator here is different. It's not a measure of events out of all possible events. It is a ratio of events to non-events.

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Q. NO 4 :-

## :- PREVALENCE :-

- Prevalence quantifies the proportion of individuals in a population who have the disease at a specific instant and provides an estimate of the probability (risk) that an individual will be ill at a point of time.
- The formula for calculating the prevalence  $P = \frac{\text{number of existing cases of disease}}{\text{total population}}$  at a given point of time.

## :- POINT PREVALENCE :-

- Prevalence can be thought of as the status of the disease in a population at a point in time and such is also referred to as point prevalence.



- This point can refer to a specific point in calendar time or to a fixed point in the course of events that varies in real time from person to person such as the onset of menopause or puberty of the third postoperative day.

## 2. PERIOD PREVALENCE:

- It represents the proportion of cases that exists within a population, at any point during a specified period of time.
- The numerator thus includes cases that were presents at the start of the period plus new cases that developed during this time.

E.g :- Frequency of patients receiving psychiatric Rx b/w may 31 - Dec 1 - 2018

Q. NO: 5 :-

What is hypothesis? Also explain different steps in testing of hypothesis?

ANSWER :- HYPOTHESIS :-

A testable theory or statement of belief used in evaluation of a population parameter of interest e.g. Mean or proportion.

STEPS :-

1: Statement of research questions in terms of statistical hypothesis (Null and alternate hypothesis).

2: Selection of an appropriate level of significance. The significance level is the risk we are willing to take that a sample which showed a difference was misleading.

5% significance level means that we are ready to take a 5% chance of wrong result.

3 :- Choosing an appropriate statistics t test, Z test for continuous data, chi squares for proportion etc. Tests generates P value.

P-value :- To prevent indicates the probability or likelihood of obtaining of a result at least as extreme as that observed in a study by chance alone assuming that there is truly no association between exposure and outcome under consideration.

4 :- Performing calculations and obtaining P value.

5 :- Drawing conclusions, rejecting null hypothesis if the P value is less than the set significant level.