

14/11/2023

Sr. No	Age (yrs.) (xi)	Frequency (fi)
1	1 -10	2 = f1
2	10- 20	3=f2
3	20 -30	2=f3
4	30-40	2=f4
5	40 - 50	1=f5
		N=10

Variable (xi) : Entities whose values varies

Data point = 5

Data Range : Class (lower class limit, upper class limit)

Class width: UL - LL

$$\sum_{i=1}^5 f_i = (f_1 + f_2 + f_3 + f_4 + f_5) = N$$

Data Organisation				
Representation of data / statistics				
Graphical / Pictorial Representation of data				
Raw Data		Organised data		
Sr. No	Age (yrs)	Formatted Age	Frequency	
1	15	7	2	
2	23	15	3	
3	43	23	2	
4	7	43	2	
5	70	70	1	
6	23		10	
7	15		Sum (f) = N	
8	7			
9	15			
10	43			

1. Find the mean of the following frequency distribution:

<i>Class</i>	0-20	20-40	40-60	60-80	80-100
<i>Frequency</i>	15	18	21	29	17

Class	Class Mark (xi)	Frequency (fi)	xi. fi
0-20	10	15	150
20-40	30	18	540
40-60	50	21	1050
60-80	70	29	2030
80-100	90	17	1530
		100	5300

$$\text{Class Mark} = (\text{Lower Limit} + \text{Upper Limit})/2$$

$$\text{Mean} = 5300/100 = 53$$

$$\text{Mean} = \frac{\text{Sigma}(x_i f_i)}{\text{Sigma } f_i}$$

2. If the mean of the distribution is 57.6 and the sum of its observations is 50, find the missing frequencies f_1 and f_2 .

<i>Class</i>	0-20	20-40	40-60	60-80	80-100	100-120
<i>Frequency</i>	7	f_1	12	f_2	8	5

Class	xi	Frequency (fi)	xi fi
0-20	10	7	70
20-40	30	f_1	$30.f_1$
40-60	50	12	600
60-80	70	f_2	$70.f_2$
80-100	90	8	720
100-120	110	5	550

1940

$$(70+30f_1+600+70f_2+720+550)$$

$$1940 + 30f_1 + 70f_2$$

$$32 + f_1 + f_2 = 50$$

Oe, $f_1 + f_2 = 18$

Or, $f_1 = (18 - f_2)$

$$57.6 = \frac{(1940 + 30f_1 + 70f_2)}{50}$$

$$2880$$

$$(1940 + 30f_1 + 70f_2)$$

$$f_1 = 18 - 10 = 8$$

$$2880$$

$$1940 + 30(18 - f_2) + 70f_2$$

$$940$$

$$540 - 30f_2 + 70f_2$$

$$400$$

$$40f_2$$

$$f_2$$

$$10$$