

# VIDYA BHAWAN BALIKA VIDYA PITH

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## Median

### Case 1. Some solved examples :

1) Find the me-dian for the following data:

Classes	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80
Frequency	4	8	10	12	10	4	2

### Solution :

Classes	Frequency (fi)	Cumulative frequency
10 - 20	4	4
20 - 30	8	12
30 - 40	10	22
40 - 50	12	34
50 - 60	10	44
60 - 70	4	48
70 - 80	2	50

Total  $N = \sum fi = 50$

$N / 2 = 50 / 2 = 25$ ,

So, 40 - 50 is the me-dian class and its lower limit =  $l = 40$

Cumulative frequency preceding the me-dian class =  $f = 22$

Frequency of the me-dian class =  $F = 12$

Class width  $h = 50 - 40 = 10$

$$\text{Median} = l + \left[ \frac{\frac{N}{2} - F}{f} \right] \times h$$

$$\Rightarrow \text{Median} = 40 + \left[ \frac{25 - 22}{12} \right] \times 10$$

$$\Rightarrow = 40 + \left( \frac{3}{12} \right) \times 10$$

$$\Rightarrow = 40 + 0.25 \times 10$$

$$\Rightarrow = 40 + 2.5$$

$$\therefore \text{Me-dian} = 42.5$$