

Median (माध्यक या मध्यक)

Individual Series (व्यक्तिगत श्रृंखला)

Q. Calculate Median for the following data:

(1) 20, 18, 16, 15, 11, 29, 39, 40, 15, 20

आरोह क्रम (वर्द्ध क्रम) — 11, 15, 16, 18, 20, 20, 29, 39, 40

$$Md = \left(\frac{N+1}{2}\right)^{\text{th}} \text{ term}$$

$$= \left(\frac{10+1}{2}\right)^{\text{th}} \text{ term} = \frac{11}{2} = 5.5^{\text{th}} \text{ term}$$

$$\therefore Md = \frac{5^{\text{th}} \text{ term} + 6^{\text{th}} \text{ term}}{2} = \frac{18+20}{2}$$

$$= \frac{38}{2} = 19 \text{ Ans}$$

(2) 5, 7, 9, 12, 10, 8, 7, 15, 21

Ascending order — 5, 7, 7, 8, 9, 10, 12, 15, 21

$$Md = \left(\frac{N+1}{2}\right)^{\text{th}} \text{ term}$$

$$= \left(\frac{9+1}{2}\right)^{\text{th}} \text{ term} = \frac{10}{2} = 5^{\text{th}} \text{ term} = 9 \text{ Ans}$$

(3) 10, 6, 7, 10, 9, 8, 7, 5, 10

Ascending order — 5, 6, 7, 7, 8, 9, 10, 10, 10

$$Md = \left(\frac{N+1}{2}\right)^{\text{th}} \text{ term}$$

$$= \left(\frac{9+1}{2}\right)^{\text{th}} \text{ term}$$

$$= \frac{10}{2} = 5^{\text{th}} \text{ term} = 8 \text{ Ans}$$

(4) 12, 16, 18, 25, 35, 40, 42, 12, 17, 19, 12

Ascending order — 12, 12, 12, 16, 17, 18, 19, 25, 35, 40, 42

$$Md = \left(\frac{N+1}{2}\right)^{\text{th}} \text{ term}$$

$$= \left(\frac{11+1}{2}\right)^{\text{th}} \text{ term}$$

$$= \frac{12}{2} = 6^{\text{th}} \text{ term} = 18 \text{ Ans}$$

⑤) 62, 80, 72, 74, 72, 78, 76, 92, 88, 84, 80, 72

Ascending order \div 62, 72, 72, 72, 74, 76, 78, 80, 80, 84, 88, 92

$$\begin{aligned} Md &= \left(\frac{N+1}{2}\right)^{\text{th}} \text{ term} \\ &= \left(\frac{12+1}{2}\right)^{\text{th}} \text{ term} \\ &= \frac{13}{2} = 6.5^{\text{th}} \text{ term} \end{aligned}$$

$$Md = \frac{6^{\text{th}} \text{ term} + 7^{\text{th}} \text{ term}}{2} = \frac{76 + 78}{2} = \frac{154}{2} = 77 \text{ Ans}$$

⑥) 23, 23, 22, 20, 19, 17, 16, 15, 15, 25, 28, 13, 19

Ascending order \Rightarrow 13, 15, 15, 16, 17, 19, 19, 20, 22, 23, 23, 25, 28

$$\begin{aligned} Md &= \left(\frac{N+1}{2}\right)^{\text{th}} \text{ term} \\ &= \left(\frac{13+1}{2}\right)^{\text{th}} \text{ term} \end{aligned}$$

$$= \frac{14}{2} = 7^{\text{th}} \text{ term} = 19 \text{ Ans}$$

⑦) 60, 67, 64, 54, 58

Ascending order - 54, 58, 60, 64, 67

$$\begin{aligned} Md &= \left(\frac{N+1}{2}\right)^{\text{th}} \text{ term} \\ &= \left(\frac{5+1}{2}\right)^{\text{th}} \text{ term} \end{aligned}$$

$$= \frac{6}{2} = 3^{\text{th}} \text{ term} = 60 \text{ Ans}$$

⑧) 23, 13, 17, 19, 20, 21, 16, 18, 17

Ascending order \div 13, 16, 17, 17, 18, 19, 20, 21, 23

$$Md = \left(\frac{N+1}{2}\right)^{\text{th}} \text{ term}$$

$$= \left(\frac{9+1}{2}\right)^{\text{th}} \text{ term}$$

$$= \frac{10}{2} = 5^{\text{th}} \text{ term} = 18 \text{ Ans}$$

9) 75, 200, 160, 225, 110, 150, 170, 185, 180, 220

शुद्धीकरण →

क्रम सं०	संकेत
1	75
2	110
3	150
4	160
5	170
6	180
7	185
8	200
9	220
10	225

$$Md = \left(\frac{N+1}{2}\right)^{th} \text{ term}$$

$$= \left(\frac{10+1}{2}\right)^{th} \text{ term}$$

$$= \frac{11}{2} = 5.5^{th} \text{ term}$$

$$5.5^{th} \text{ term } Md = \frac{5^{th} \text{ term} + 6^{th} \text{ term}}{2}$$

$$= \frac{170 + 180}{2} = \frac{350}{2}$$

$$= 175 \text{ Ans}$$

10) निम्न आँकड़ों से माध्यिका प्राप्त कीजिए।

क्रम सं०	अंक	क्रम सं०	अंक	क्रम सं०	अंक
1	12	7	41	13	11
2	32	8	32	14	15
3	35	9	11	15	35
4	33	10	18	16	23
5	15	11	20	17	38
6	21	12	22	18	12

एम -

Ascending order -

क्रम सं०	अंक	क्रम सं०	अंक	क्रम सं०	अंक
1	11	7	18	13	32
2	11	8	20	14	33
3	12	9	21	15	35
4	15	10	22	16	35
5	15	11	23	17	38
6	17	12	32	18	41

$$Md = \left(\frac{N+1}{2}\right)^{th} \text{ term}$$

$$= \left(\frac{18+1}{2}\right)^{th} \text{ term} = \frac{19}{2} = 9.5^{th} \text{ term}$$

$$9.5^{th} \text{ term } Md = \frac{9^{th} \text{ term} + 10^{th} \text{ term}}{2} = \frac{21 + 22}{2} = \frac{43}{2} = 21.5 \text{ Ans}$$