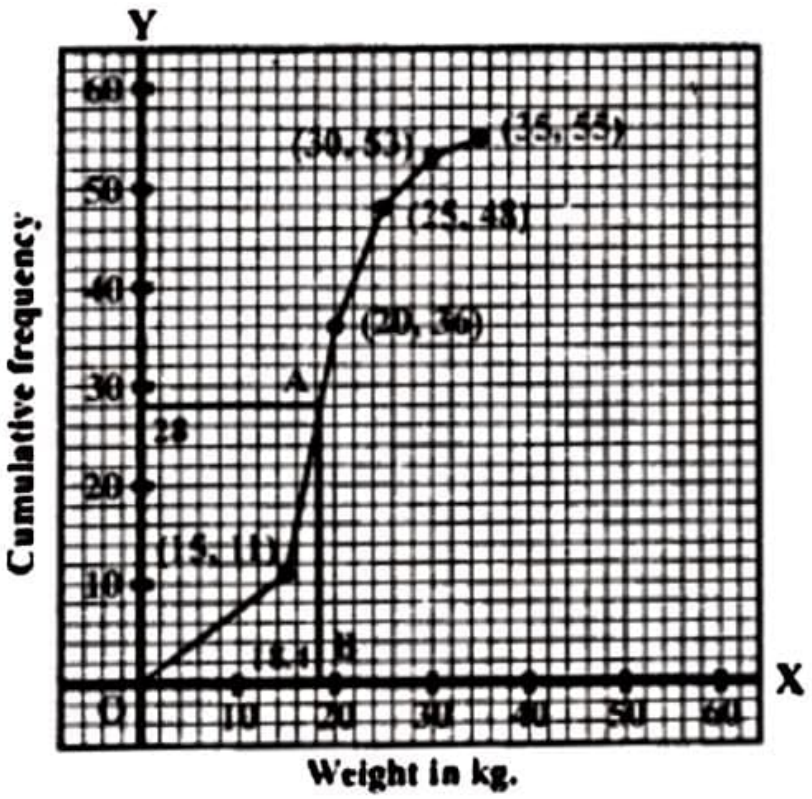
Weight (kg)	No. of days	Cumulative frequency
10-15	11	11
15-20	25	36
20-25	12	48
25-30	5	53
30-35	2	55

.No. of terms : 55

$$\text{Median} = \frac{55+1}{2} = \frac{56}{2} = 28\text{th term}$$

Through mark of 28th on the y-axis, draw a line parallel to x-axis which meets the curve at A. From A, draw a perpendicular line segment to x- axis. Which meets it at B.



∴ The value of B is the median which is 18.4

(i)

Marks less then	Cumulative Frequency
10	5
20	24
30	37
40	40
50	42
60	48
70	70
80	77
90	79
100	80

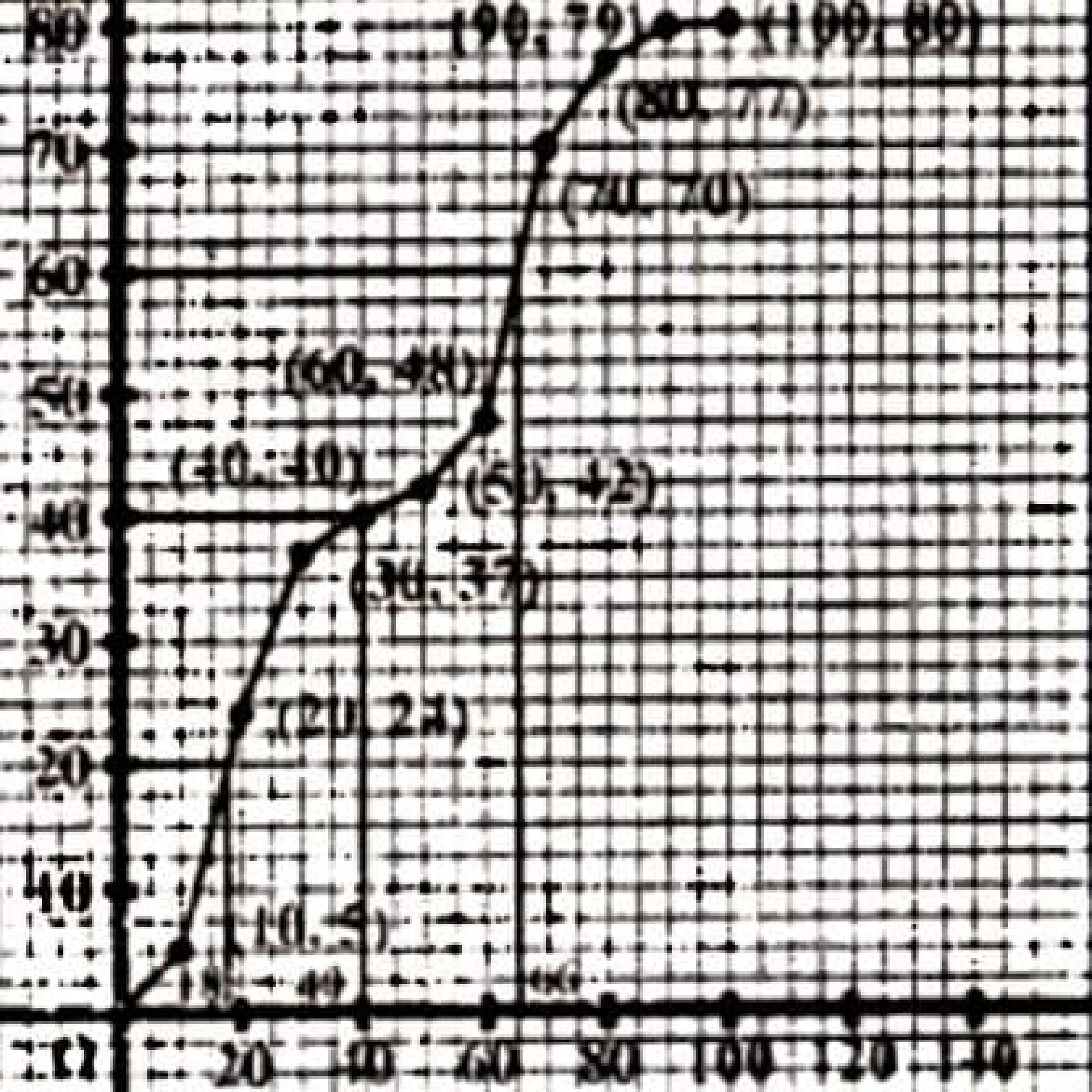
No. of terms = 80

Median = 40th term Through n
of 40 draw a line parallel to x-
which meets the curve at A. F
A, draw a perpendicular to x-
which meets it at B

(ii) Lower quartile (Q1) = $\frac{n}{4}$ th ter
= $\frac{80}{4}$ th term (Here n = 80 which
even)

= 20th term =18

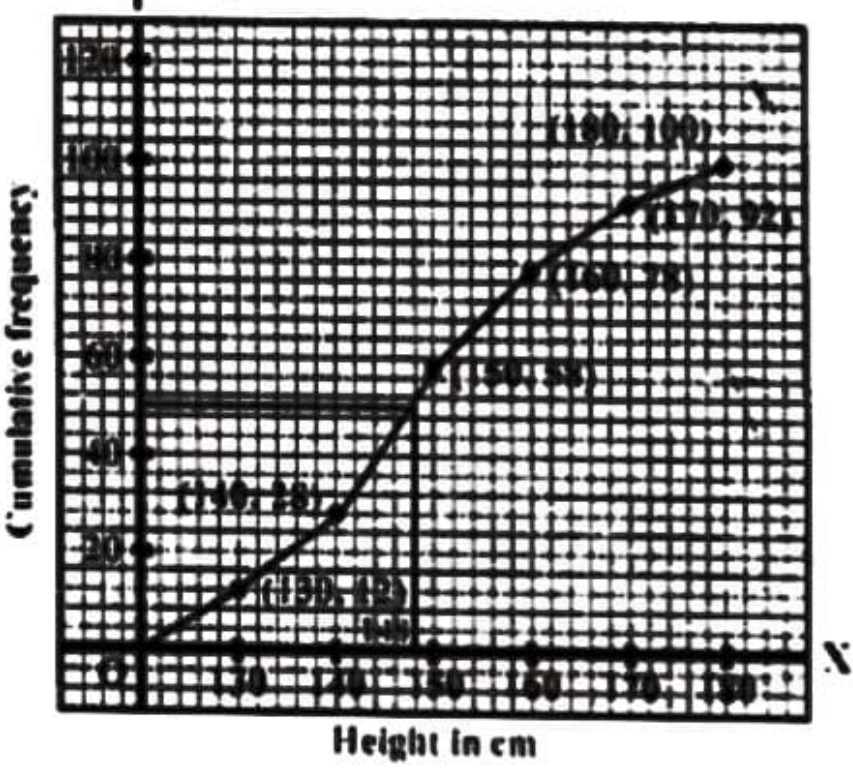
(iii) Upper quartile (Q1) = $\frac{3}{4}$ r
term = $\frac{3x80}{4}$ = 60th term = 66 .


(100, 80)
(80, 77)
(70, 70)
(60, 58)
(40, 40)
(50, 42)
(30, 37)
(20, 25)
(10, 5)

Height (in cm)	No. of Pupils	Cumulative Frequency
121-130	12	12
131-140	16	28
141-150	30	58
151-160	20	78
161-170	14	92
171-180	8	100

No. of terms = 100

$\therefore$ Median = $\frac{100}{2}$ = 50th term



Through mark 50, draw a line parallel to x- axis which meets the curve at A. From A, draw perpendicular to x-axis which meets x-axis at B is the median which is 148 cm.

frequency distribution of heights of 50 boys:

Find the mode of heights.

Answer 2

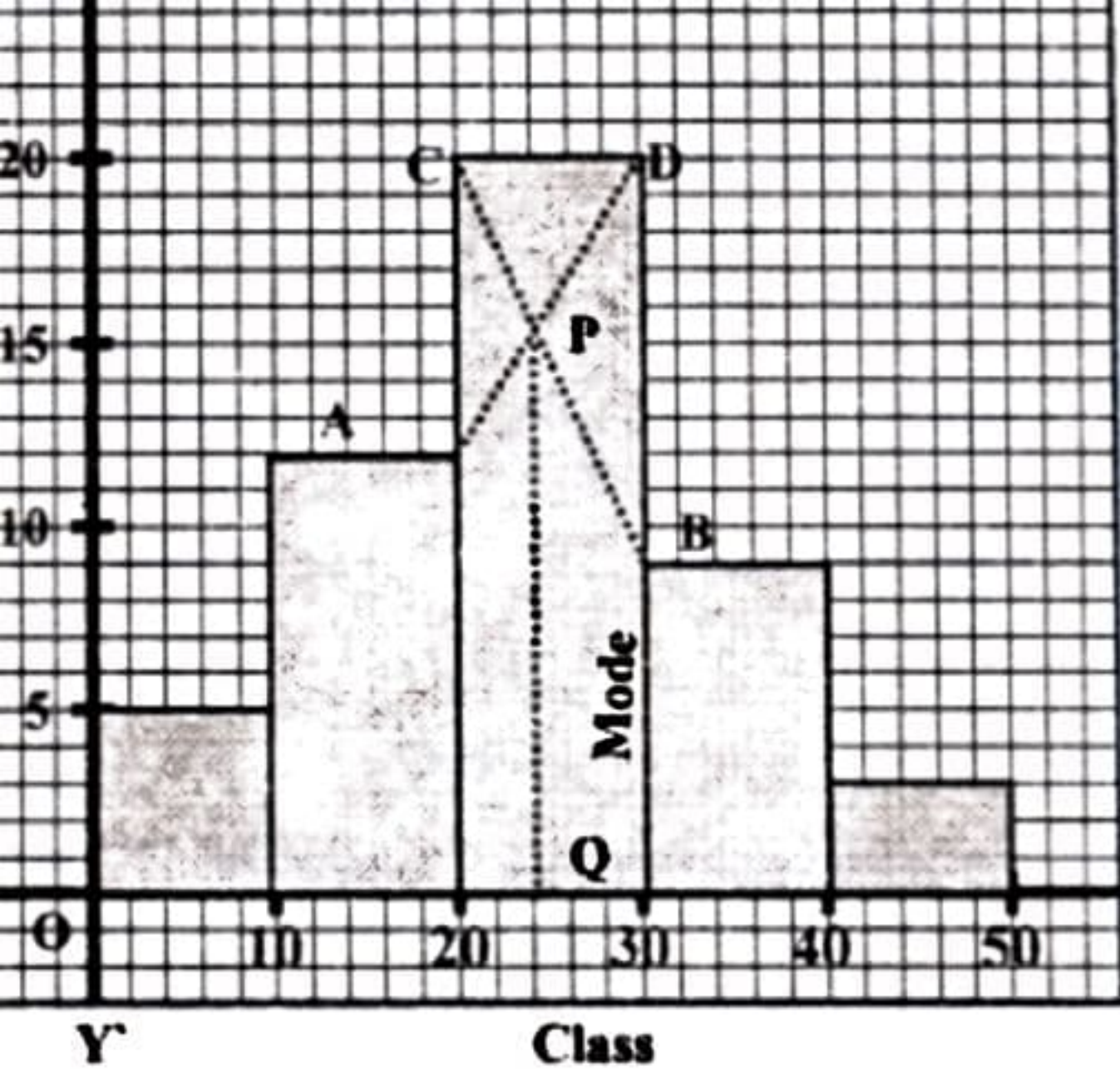
Mode is 122 because it occurs maximum times i.e its., frequency is 18.

Question 3.

Find the mode of following data, using a histogram:

Answer 3

Mode class = 20 – 30



see in the histogram that li

and CB intersect at P. Dr

pendicular Q to the horizontal

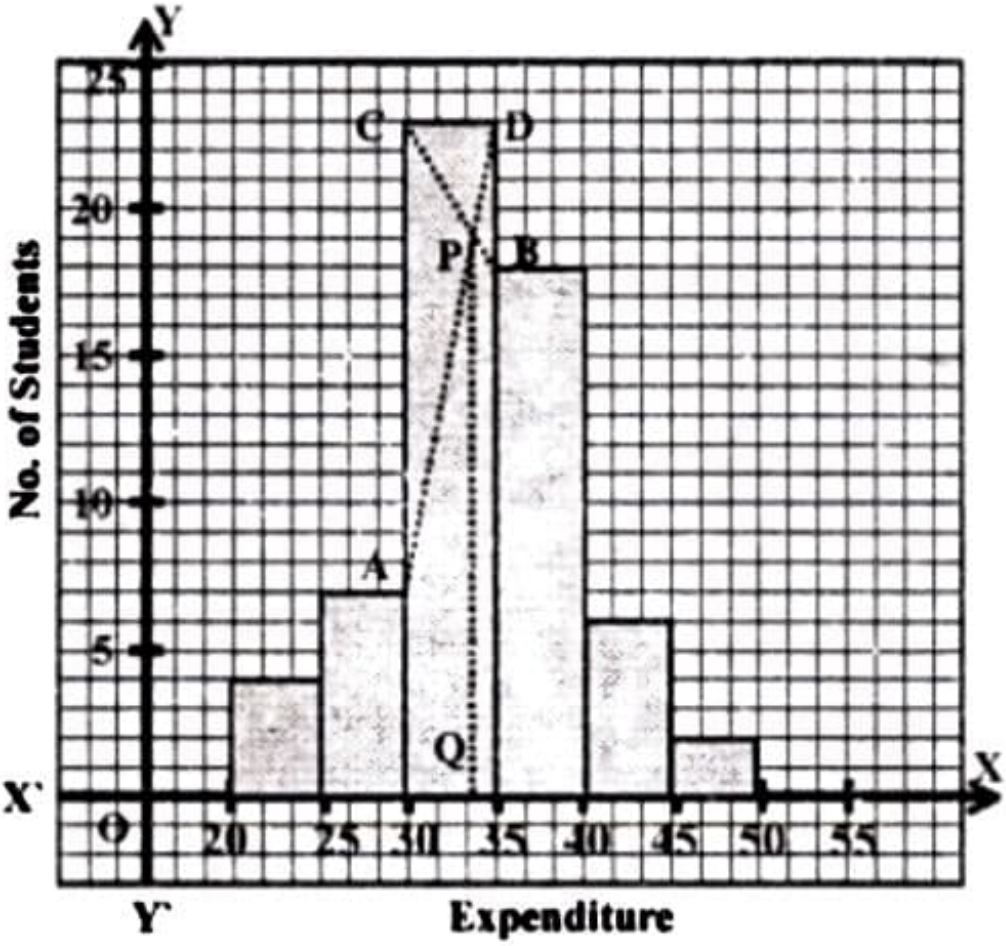
. Which is the value of

le = 24

Answer 4

Model class is = 30 – 35

and Mode = 34



(iv) $\text{Mean}(\bar{x}) = \frac{x_1 + x_2 + x_3 + ... + x_n}{x} = \frac{154}{11} = 14$

We see in the histogram that line AD and CB intersect at P. Draw perpendicular Q to the horizontal axis. Which is the value of the mode.

each test being marked out of 20.

15,17,16,7,10,12,14,16,19,12,16.

(i) What are his modal marks ?

(ii) What are his median marks ?

(iii) What are his total marks ?

(iv) What are his mean marks ?

Answer 6

Arranging the given data in ascending order : 7, 10,12, 12,14, 15,16,16, 16, 17,19.

(i) Mode = 16 as it occurs in maximum times.

(ii) Median= $\frac{11+1}{2}$ = 6th term which

Answer 6

Arranging the given data in ascending order : 7, 10,12, 12,14, 15,16,16, 16, 17,19.

(i) Mode = 16 as it occurs in maximum times.

(ii) Median= $\frac{11+1}{2}$ = 6th term which is 15

(iii) Total marks = 7 + 10+ 12+ 12+ 14+ 15+ 16 + 16+ 16+ 17+ 19= 154

(iv) $\text{Mean}(\bar{x}) = \frac{x_1 + x_2 + x_3 + ... + x_n}{x} = \frac{154}{11} = 14$

Question 7.

Find the mean, median and mode of the following marks obtained by 16 students in a class test marked out of 10 marks.

0,0,2,2,3,3,3,4,5,5,5,5,6, 6,7,8

Answer 7

(i) $\text{Mean} = \frac{x_1 + x_2 + ... x_n}{x} = \frac{64}{16} = 4$

(ii) Median = Mean of 8th and 9th term

$= \frac{4+5}{2} = \frac{9}{2} = 4.5$

Answer 7

(i) **Mean** $= \frac{x_1 + x_2 + \ldots x_n}{x} = \frac{64}{16} = 4$

(ii) Median = Mean of 8th and 9th term

$= \frac{4+5}{2} = \frac{9}{2} = 4.5$

(iii) Mode = 5 as it occurs in maximum times.

Question 8.

At a shooting competition the score of a com-petitor were as given below :

(i) What was his modal score ?

(ii) What was his median score ?

(iii) What was his total score ?

(iv) What was his mean score ?

Answer 8

Score x	No. of shots f_i	$f_i x_i$
0	0	0
1	3	3
2	6	12
3	4	12
4	7	28
5	5	25
Total	25	80

(i) Modal score =4 as its frequency is 7, the maximum.

(ii) **Median** $= \frac{25+1}{2}$ **=13th term which is 3**

(iii) **Total score = 80** (iv) **Mean** $= \frac{\sum f_i x_i}{} = \frac{80}{}$

Score x	No. of shots f_i	$f_i x_i$
0	0	0
1	3	3
2	6	12
3	4	12
4	7	28
5	5	25
Total	25	80

(i) Modal score =4 as its frequency is 7, the maximum.

(ii) Median $= \dfrac{25+1}{2}$ **=13th term which is 3**

(iii) Total score = 80 **(iv) Mean** $= \dfrac{\sum f_i x_i}{\sum f_i} = \dfrac{80}{25} = 3.2$