



### Exercise 9B

Question 1:

Class	Frequency $f_i$	C.F.
0 - 10	3	3
10 - 20	6	9
20 - 30	8	17
30 - 40	15	32
40 - 50	10	42
50 - 60	8	50
	$N = \sum f_i = 50$	

Now,  $N = 50 \Rightarrow \left(\frac{N}{2}\right) = 25$

The cumulative frequency just greater than 25 is 32 and corresponding class is 30 - 40.

Thus, the median class is 30 - 40

$l = 30$ ,  $h = 10$ ,  $f = 15$ ,  $c =$  C.F. preceding class 30 - 40 is 17 and  $\frac{N}{2} = 25$

$$\begin{aligned} \text{Median} &= l + \left[ h \times \frac{\left(\frac{N}{2} - c\right)}{f} \right] = 30 + \left[ 10 \times \frac{(25 - 17)}{15} \right] \\ &= (30 + 5.33) = 35.33 \end{aligned}$$

Hence the median is 35.33

Question 2:

We prepare the frequency table, given below

Marks	No. of students $f_i$	C.F.
0 - 7	3	3
7 - 14	4	7
14 - 21	7	14
21 - 28	11	25
28 - 35	0	25
35 - 42	16	41
42 - 49	9	50
	$N = \sum f_i = 50$	

Now,  $N = 50 \Rightarrow \left(\frac{N}{2}\right) = 25$

The cumulative frequency is 25 and corresponding class is 21 - 28.

Thus, the median class is 21 - 28

$l = 21, h = 7, f = 11, c = \text{C.F. preceding class 21 - 28 is 14 and } \frac{N}{2} = 25$

$$\begin{aligned} \text{Median} &= l + \left[ h \times \frac{\left(\frac{N}{2} - c\right)}{f} \right] = 21 + \left[ 7 \times \frac{(25 - 14)}{11} \right] \\ &= (21 + 7) = 28 \end{aligned}$$

Hence the median is 28.

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