Exercise 9A

Question 15:

We have h = 4 and let assumed mean be A = 26. We have the table given below:

Marks	Frequency f_i	Mid value x_i	$u_i = \left(\dfrac{x_i - A}{h}\right)$	$(f_i \times u_i)$
4 - 8	2	6	-5	-10
8 - 12	12	10	-4	-48
12 - 16	15	14	-3	-45
16 - 20	25	18	-2	-50
20 - 24	18	22	-1	-18
24 - 28	12	26 = A	0	0
28 - 32	13	30	1	13
32 - 36	3	34	2	6
	$\Sigma f_i = 100$			$\Sigma(f_i \times u_i) = -152$

A = 26, h = 4, $\Sigma f_i = 100$ and $\Sigma (f_i \times u_i) = -152$

$$\bar{x} = A + \left[h \times \frac{\Sigma (f_i \times u_i)}{\Sigma f_i}\right]$$
$$= 26 + \left[4 \times \frac{-152}{100}\right]$$
$$= 26 - \frac{152}{25} = (26 - 6.08) = 19.92$$

Hence the mean of given frequency distribution is 19.92.

Question 16:

We have h= 30 and let A = 75 be the assumed mean. we have the table given below:

Marks	Frequency f_i	Mid value x_i	$u_i = \left(\dfrac{x_i - A}{h}\right)$	$(f_i \times u_i)$
0 - 30	12	14	-2	-24
30 - 60	21	45	-1	-21
60 - 90	34	75 = A	0	0
90 - 120	52	105	1	52
120 - 150	20	135	2	40
150 - 180	11	165	3	33
	$\Sigma f_i = 150$			$\Sigma (f_i \times u_i) = 80$

Thus, A = 75, h = 30, $\Sigma f_i = 150$ and $\Sigma (f_i \times u_i) = 80$

Mean, $\bar{x} = A + \left[h \times \dfrac{\Sigma (f_i \times u_i)}{\Sigma f_i}\right]$

$= 75 + \left(30 \times \dfrac{80}{150}\right)$

$= 75 + 16 = 91$

Hence, the mean of the given frequency distribution is 91.

********** END *********