Exercise 9A

Question 7:

We have

Class	Frequency f_i	Mid Value x_i	$f_i x_i$
0 - 10	15	5	75
10 - 20	20	15	300
20 - 30	35	25	875
30 - 40	p	35	35p
40 - 50	10	45	450
	$\Sigma f_i = 80+p$		$\Sigma f_i x_i = = 1700+35p$

$\therefore$ Mean, $\bar{x} = \frac{\Sigma (f_i x_i)}{\Sigma f_i}$

$\Rightarrow \frac{(1700 + 35p)}{(80 + p)} = 24$

$\Rightarrow (1700 + 35p) = 1920 + 24p$

$\Rightarrow 11p = (1920 - 1700) = 220$

$\therefore \quad p = \frac{220}{11} = 20$, hence $p = 20$

Question 8:

We have

$17 + f_1 + 32 + f_2 + 19 = 120$

$\Rightarrow \quad f_2 = 52 - f_1$

Class	Frequency f_i	Mid Value x_i	$f_i x_i$
0 - 20	17	10	170
20 - 40	f_1	30	$30 f_1$
40 - 60	32	50	1600
60 - 80	$52 - f_1$	70	$3640 - 70 f_1$
80 - 100	19	90	1710
	$\Sigma f_i = 120$		$\Sigma f_i x_i = 7120 - 40 f_1$

$\therefore$ Mean, $\bar{x} = \dfrac{\Sigma (f_i \times x_i)}{\Sigma f_i} = \dfrac{7120 - 40f_1}{120} = 50$

$\Rightarrow 7120 - 40f_1 = 6000 \Rightarrow 40f_1 = 1120 \Rightarrow f_1 = 28$

Thus, $f_1 = 28$ and $f_2 = (52 - 28) = 24$

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