Exercise 14F

Question 6:

We prepare the following frequency distribution table:

(X_i)	(f_i)	f_iX_i
15	8	120
20	7	140
25	P	25p
30	14	420
35	15	525
40	6	240
	$\sum f_i = 50 + p$	$\sum f_i x_i = 1445 + 25p$

$$\text{Mean} = \frac{\sum f_i x_i}{\sum f_i} = \frac{1445 + 25p}{50 + p}$$

But mean = 28.25 given

$$\therefore \quad \frac{1445+25p}{50+p} = 28.25$$

$\Rightarrow$ 1445 + 25p = (28.25)(50+p)

$\Rightarrow$ 1445 + 25p = 1412.50 + 28.25p

$\Rightarrow$ -28.25p + 25p = -1445 + 1412.50

$\Rightarrow$ -3.25p = -32.5

$\Rightarrow p = \frac{32.5}{3.25} = 10$

$\therefore$ the value of p=10

Question 7:

We prepare the following frequency distribution table:

(X_i)	(f_i)	f_iX_i
8	12	96
12	16	192
15	20	300
P	24	24p
20	16	320
25	8	200
30	4	120
	$\sum f_i = 100$	$\sum f_i x_i = 1228 + 24p$

$$\therefore \text{Mean} = \frac{\sum f_i x_i}{\sum f_i} = \frac{1228 + 24p}{100}$$

But mean = 16.6(given)

$$\therefore \frac{1228 + 24p}{100} = 16.6$$

$\Rightarrow$ 1228 + 24p = 1660

$\Rightarrow$ 24p = 1660-1228

$\Rightarrow$ 24p = 432

$$\Rightarrow p = \frac{432}{24} = 18$$

$\therefore$ the value of p =18

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