Exercise 14F

Question 11:

Clearly , h=1. Let the assumed mean A=21

(X_i)	(f_i)	$u_i = \frac{x_i - 21}{1}$	$f_i u_i$
18	170	-3	-510
19	320	-2	-640
20	530	-1	-530
21	700	0	0
22	230	1	230
23	140	2	280
24	110	3	330
Total	$\sum f_i = 2200$		$\sum f_i u_i = -840$

Let $\bar{x}$ be the mean.
Using formula,

$$\text{Mean, } \bar{x} = A + h \times \frac{\sum f_i u_i}{\sum f_i}$$

$$= 21 + 1 \times \left(\frac{-840}{2200}\right)$$

$$= 21 + (-0.38)$$

$$= 20.62$$

Thus the mean is 20.62

Question 12:

Clearly, h= (x2- x1)

=(600-200)=400

Let assumed mean A =1000

Height (in m) (X_i)	No of villages (f_i)	$U_1 = \frac{xi - 1000}{400}$	$f_i x u_i$
200	142	-2	-284
600	265	-1	-265
1000	560	0	0
1400	271	1	271
1800	89	2	178
2200	16	3	48
Total	$\sum f_i = 1343$		$\sum f_i u_i = -52$

Let $\bar{x}$ be the mean.

Using formula,

Mean, $\bar{x} = A + h \times \frac{\sum f_i u_i}{\sum f_i}$

$= 1000 + 400 \times \left(\frac{-52}{1343}\right)$

$= 1000 + 400 \times (-0.0387)$

$= 1000 + (-15.488)$

$= 984.51$

Thus, the mean height is 984. 51 m

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