Statistics Ex 7.4 Q1

Answer :

First of all arranging the data in ascending order of magnitude, we have

$694, 696, 699, 705, 710, 712, 715, 716, 719, 724, 725, 728, 729, 734, 745$

Here, $N = 15$, which is an odd number

Therefore, median is the value of

$$\left(\frac{N+1}{2}\right) = \frac{15+1}{2}$$

$$= 8^{th} \text{ observation}$$

$$= \boxed{716}$$

Statistics Ex 7.4 Q2

Answer :

First we prepare the following cummulative table to compute the median.

Height (in cm) Class:	Frequency: (f_i)	Cumulative Frequency $(c.f.)$
160 – 162	15	15
163 – 165	118	133
166 – 168	142	275
169 – 171	127	402
172 – 174	18	420
	$N = 420$	

Now, $N = 420$

$\therefore \frac{N}{2} = 210$

Thus, the cumulative frequency just greater than 210 is 275 and the corresponding class is $166 - 168$

Therefore, $166 - 168$ is the median class.

$l = 166, f = 142, F = 133 \text{ and } h = 2$

We know that,

$$\text{Median} = l + \left\{\frac{\frac{N}{2} - F}{f}\right\} \times h$$

$$= 166 + \left\{\frac{210 - 133}{142}\right\} \times 2$$

$$= 166 + \frac{77 \times 2}{142}$$

$$= 166 + \frac{154}{142}$$

$$= 166 + 1.08$$

$$= 167.08$$

Hence, the median height is approximately 167.1 cm.

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