* بسم الله الرحمن الرحيم *

sheet 1 :

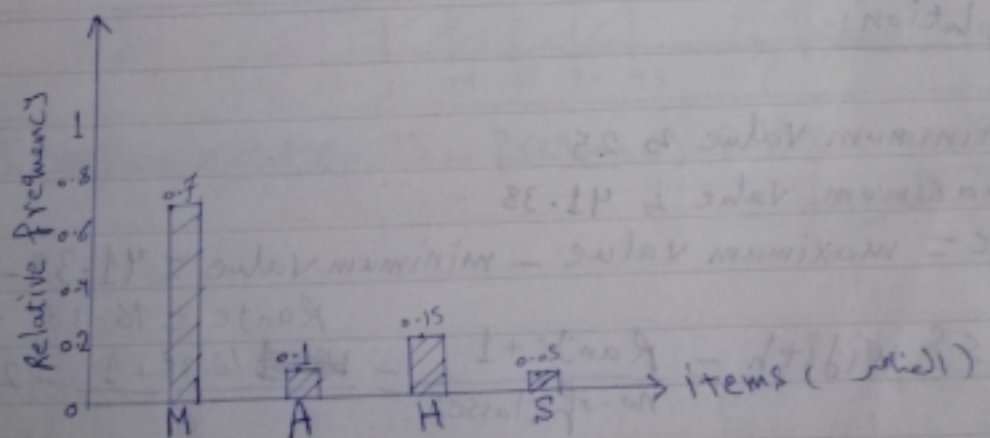
1-) The relative frequency $= \frac{F}{\Sigma F}$

(relative frequencies are useful for comparing distributions of different sizes.)

Table : The frequency table

Class	Tally	frequency	Relative frequency
M	||||||||||||||||||||||||||| |||||||	28	0.7
A	|||||	4	0.1
H	|||||	6	0.15
S	||	2	0.05

$\Sigma f = 28 + 4 + 6 + 2 = 40$

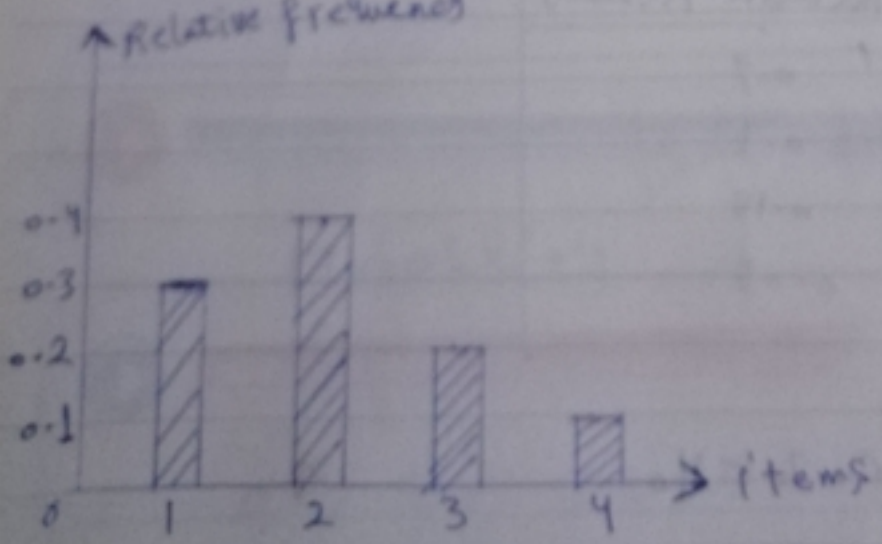


The bar graph

2) The frequency table:

Class	Tally	frequency	Relative frequency
1	~~||||||||||~~	10	0.3
2	~~||||||||||||~~	12	0.4
3	~~||||~~	5	0.16
4	~~||~~	3	0.1

$$\Sigma f = 10 + 12 + 5 + 3 = 30$$



Sheet 1

[3] the minimum value is 25
the maximum value is 41.38

Range = max. value − min. value = 41.38 − 25 = 16.38

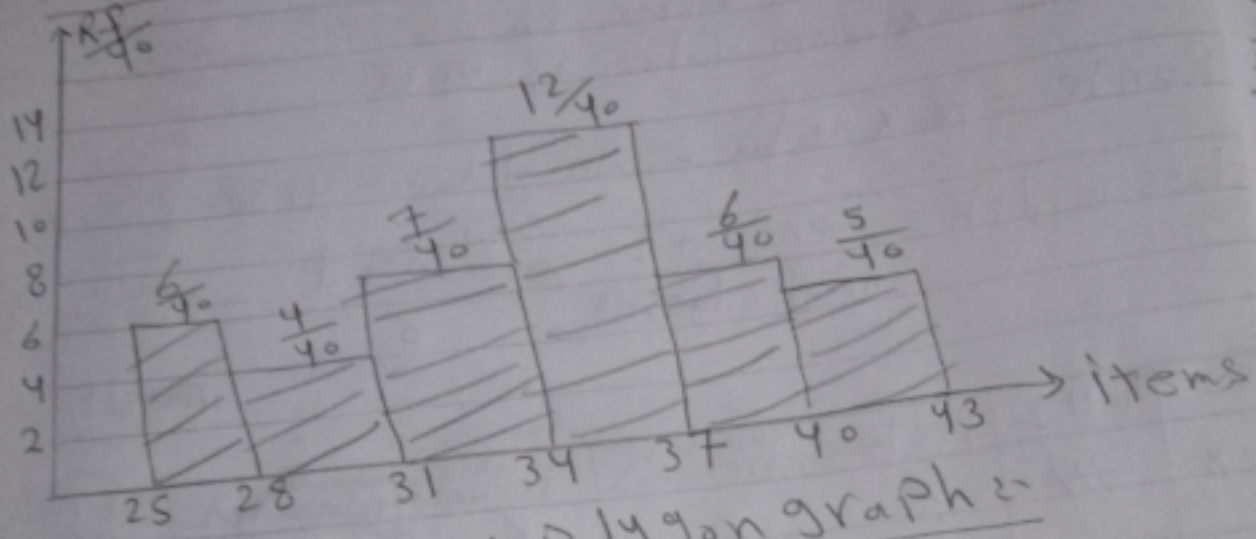
$$\text{class width} = \frac{\text{Range} + 1}{\text{no. of classes}} = \frac{16.38 + 1}{6} = 2.89 \approx 3$$

round it up

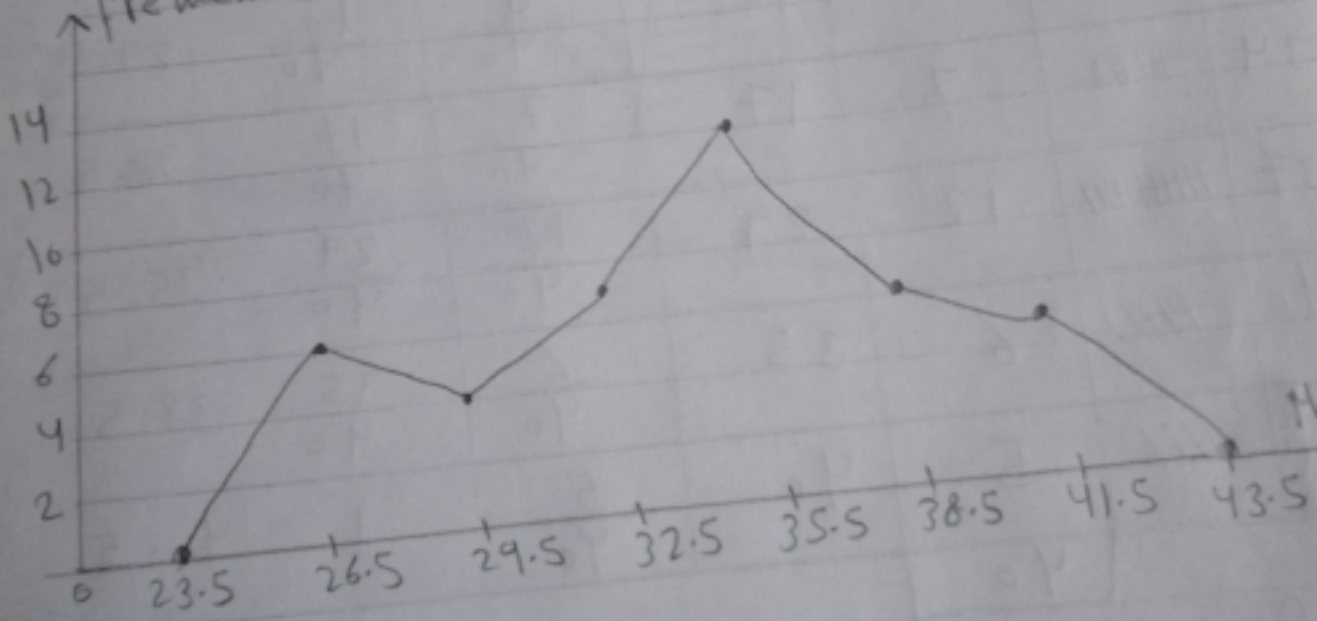
class	Tally	frequency	cumulative frequency	Relative frequency	Cumulative relative freq.	Mid-Point x_m
25–28	##	6	6	$\frac{6}{40}$	$\frac{6}{40}$	26.5
28–31	///	4	10	$\frac{4}{40}$	$\frac{10}{40}$	29.5
31–34	~~####~~	7	17	$\frac{7}{40}$	$\frac{17}{40}$	32.5
34–37	~~########~~	12	29	$\frac{12}{40}$	$\frac{29}{40}$	35.5
37–40	~~####~~	6	35	$\frac{6}{40}$	$\frac{35}{40}$	38.5
40–43	###	5	40	$\frac{5}{40}$	1	41.5
		40				

$\Sigma f = 40$

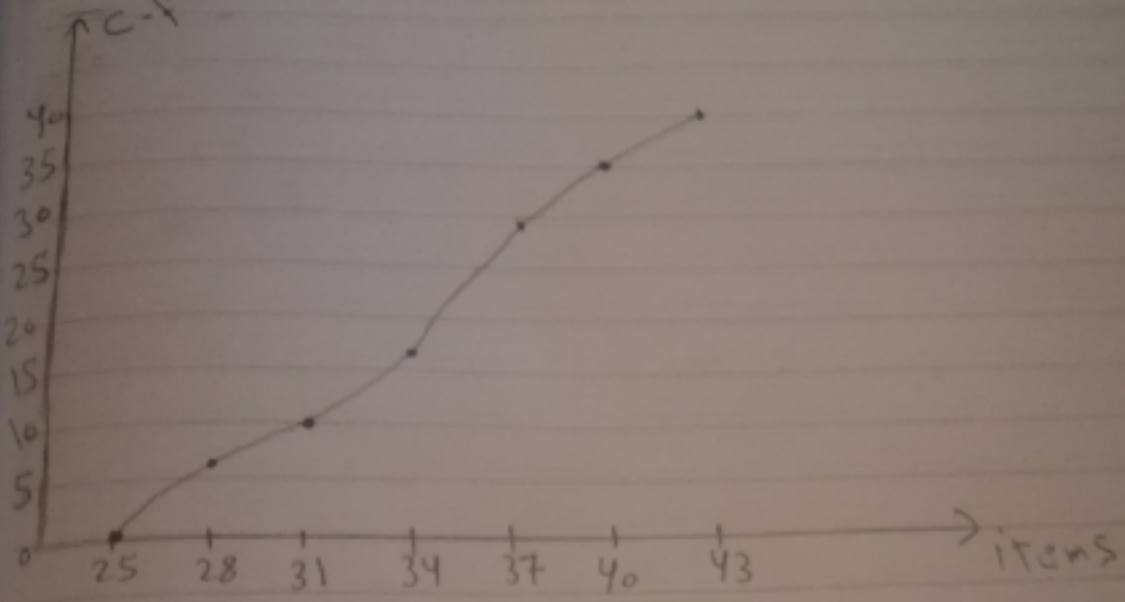
The histogram graph:



the frequency polygon graph:



The ogive graph

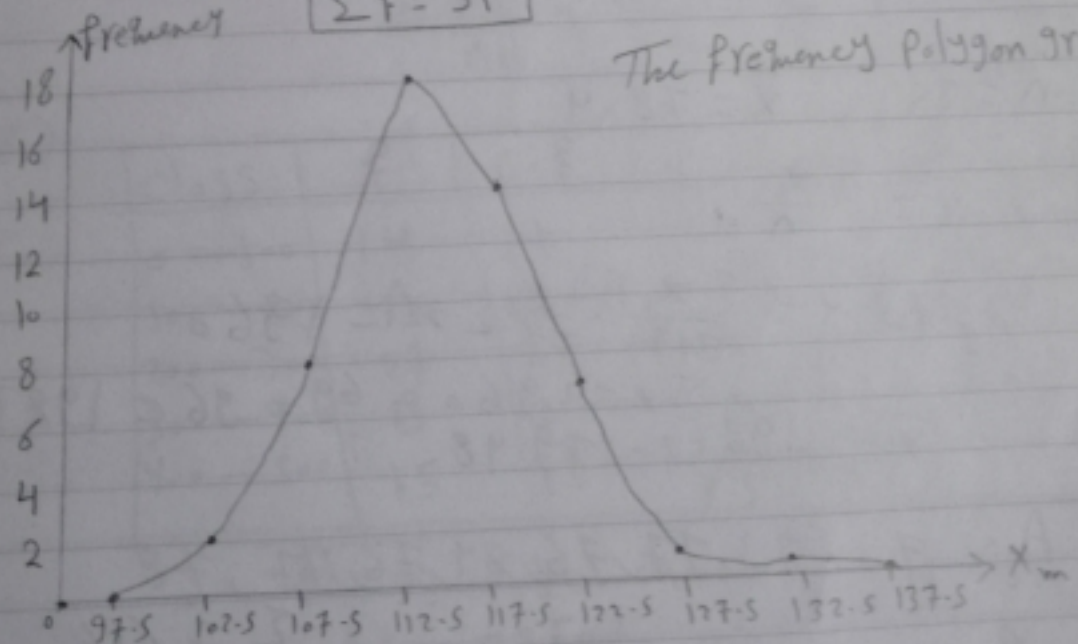


:: Sheet 1 ::

4) The minimum value is 100
The maximum value is 133
Range = 133 − 100 = 33
Class width = $\frac{\text{Range}+1}{\text{no of classes}} = \frac{33+1}{7} = 4.85 \approx 5$

Class	Tally	Frequency	f/51	X_m
100 − 105	//	2	$\frac{2}{51}$	102.5
105 − 110	/// ###	8	$\frac{8}{51}$	107.5
110 − 115	### ### ###	18	$\frac{18}{51}$	112.5
115 − 120	/// ### ###	14	$\frac{14}{51}$	117.5
120 − 125	// ###	7	$\frac{7}{51}$	122.5
125 − 130	/	1	$\frac{1}{51}$	127.5
130 − 135	/	1	$\frac{1}{51}$	132.5
		$\Sigma f = 51$		

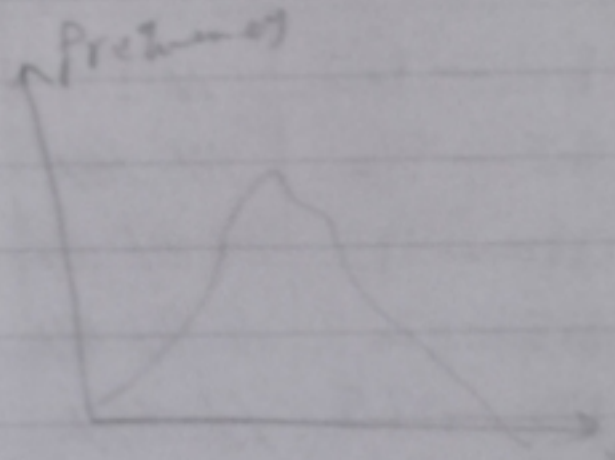
The frequency polygon graph



5)

Steam	leaf
74	6 6 7
75	0 3 4 6 7 8 9
76	0 0 1 2 3 4 6 6 7 8 9
77	0 0 1 1 1 1 6 8
78	0

Class	Tally	Frequency	X_m
740—750		3	745
750—760		7	755
760—770		11	765
770—780		8	775
780—790		1	785
		$\Sigma f = 30$	

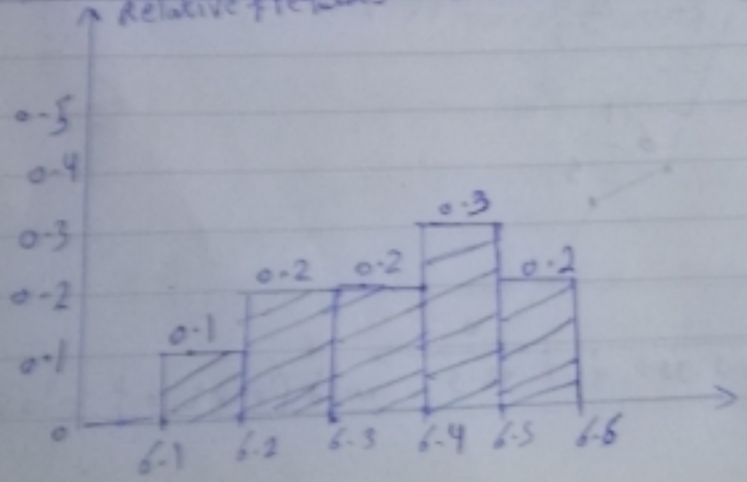


6)

stem	leaf
6.1	0 7 7
6.2	1 1 2 3 7 7 8
6.3	0 1 2 3 7 7
6.4	0 1 1 3 4 5 7 8
6.5	0 1 2 3 8 9

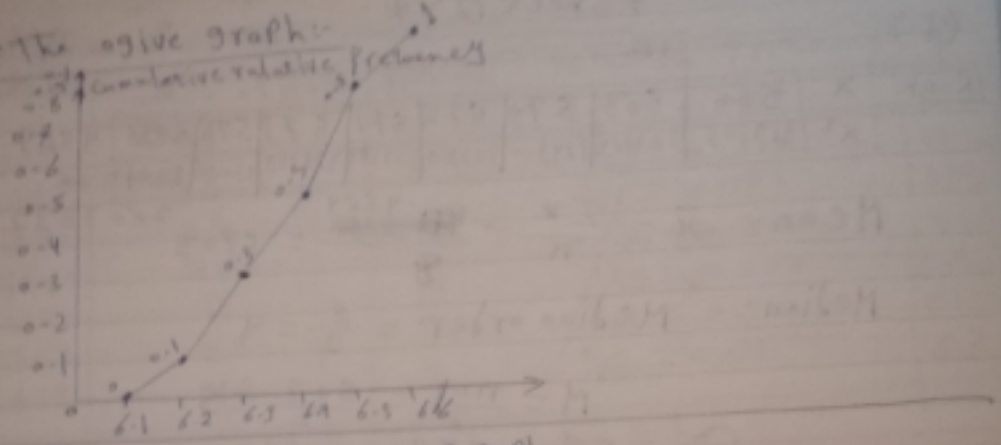
class	frequency	Cumulative frequency	Relative frequency	Cummulative relative frequency	x_m
6.1–6.2	3	3	0.1	0.1	6.15
6.2–6.3	7	10	0.2	0.3	6.25
6.3–6.4	6	16	0.2	0.5	6.35
6.4–6.5	8	24	0.3	0.8	6.45
6.5–6.6	6	30	0.2	1	6.55

$\Sigma f = 30$

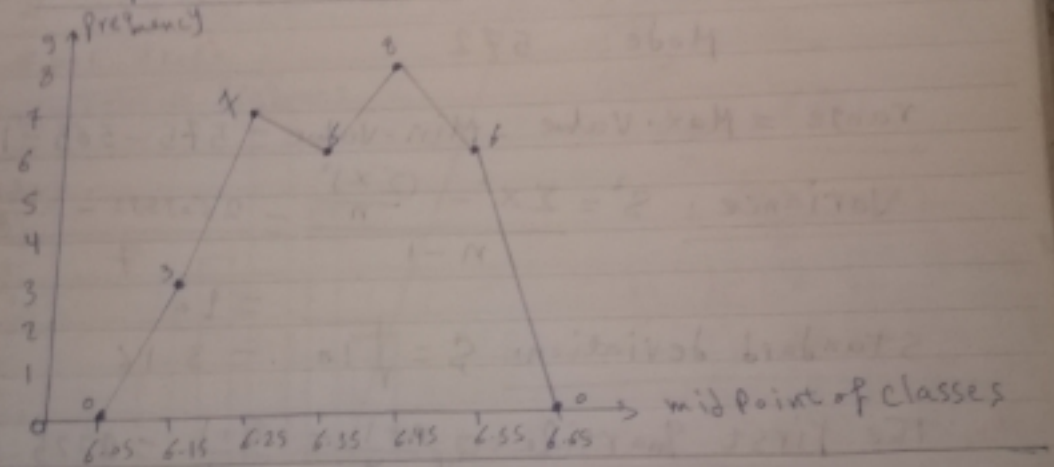


The histogram graph

* The ogive graph:



* The frequency Polygon graph:



1) * The frequency table

class	frequency	cumulative frequency	Relative frequency	Cumulative relative frequency	x m
0 – 20	4	4	4/120	4/120	10
20 – 40	16	20	16/120	20/120	30
40 – 60	60	80	60/120	80/120	50
60 – 80	28	108	28/120	108/120	70
80 – 100	12	120	12/120	1	90
	Σf = 120