KIRAN TUTORIALS **Seat No.** | | | | | | | |

Std 10 (English) **Mathematics Part - I**

Time 1HRS	**Chapter 6.**	**Marks 20**

Q.1 **Multiple Choice Questions** **1**

1 For a frequency distribution, A = 37 , $\bar{d}$ = -2.23 then $\bar{x}$ = ?
a. 34.31 b. 34.77 c. 34.25 d. 34.75

Ans Option b.

Q.2 **Answer the following** **2**

1 Prepare a frequency table from the following distribution table:

Class	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50
c.f. (less than type)	3	10	20	28	30

Ans

Class	**Frequency**	**(c.f.) (less than type)**
0 - 10	**3**	3
10 - 20	10 - 3 = **7**	10
20 - 30	20 - 10 = **10**	20
30 - 40	28 - 20 = **8**	28
40 - 50	30 - 28 = **2**	30

2 For the frequency distribution of marks scored by a student, A = 57, $\sum f_i = 80$ and $\sum f_i d_i = 240$. Find the mean marks.

Ans Here A = 57, $\sum f_i = 80$, $\sum f_i d_i = 240$.

$d = \frac{\sum f_i d_i}{\sum f_i}$ ... (Formula)

= 24080 = 3 ... (Substituting the values)

Mean x = A + d ... (Formula)

= 57 + 3 = 60 ... (Substituting the values)

The mean marks scored by a student is **60**.

Q.3 **Solve the following(Any Two)** **6**

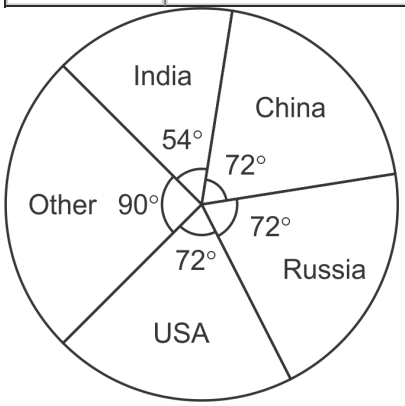
1 Draw a pie diagram to represent the world population of countries given in the following table after determining the valued of

Country	India	China	Russia	USA	Other	Total
Percentage of population	15	20	a	a	25	100

Ans

Country	**% of World Population**	**Measure of central angle (θ)**
India	15	15100× 360° = 54°
China	20	20100× 360° = 72°

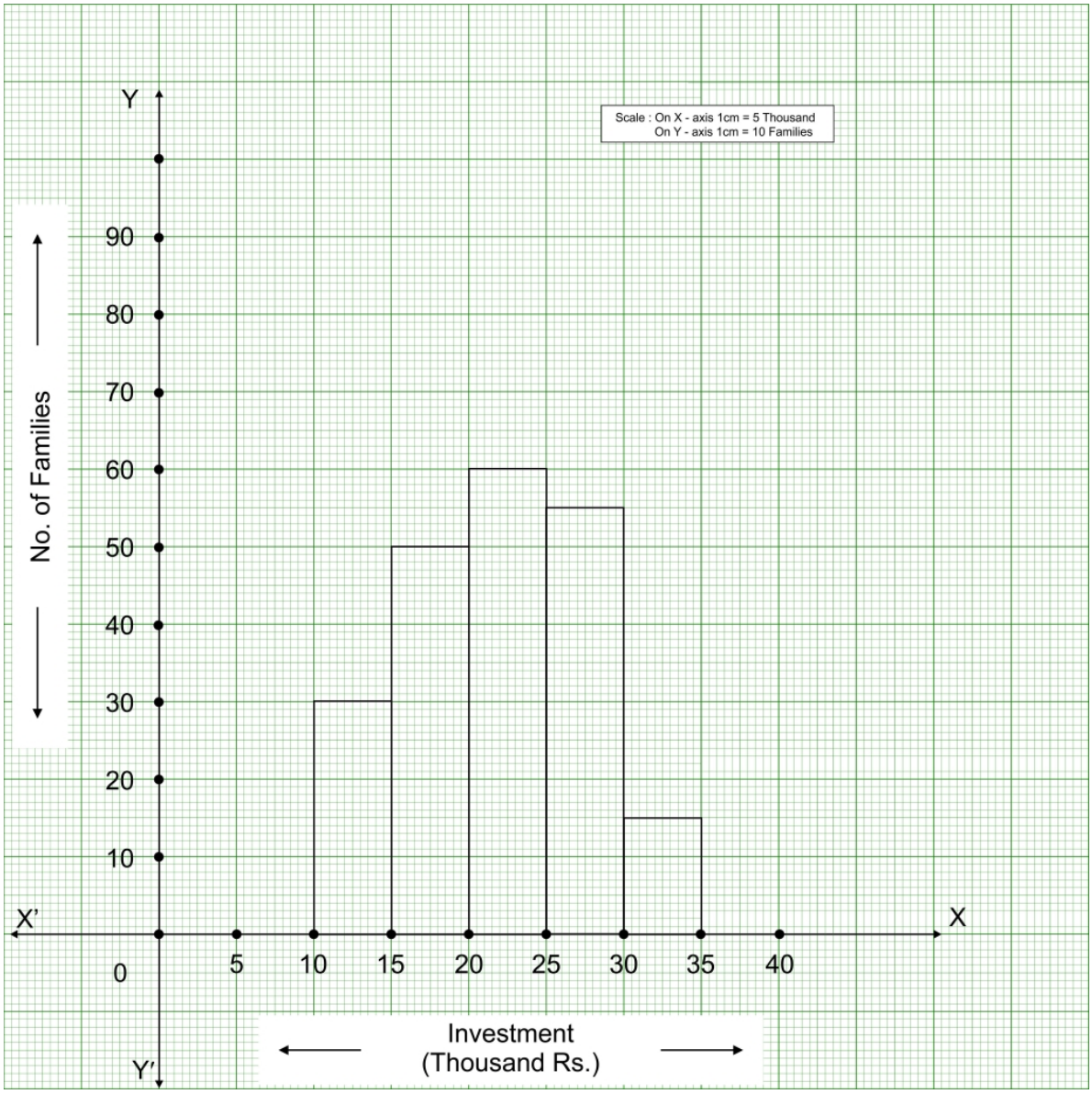
Russia	20	20100× 360° = 72°
USA	20	20100× 360° = 72°
Others	25	25100× 360° = 90°
Total	100	360°



2 The following table shows the investment made by some families. Show the information by a histogram.

Investment (Thousand Rupees)	10-15	15-20	20-25	25-30	30-35
No. of families	30	50	60	55	15

Ans

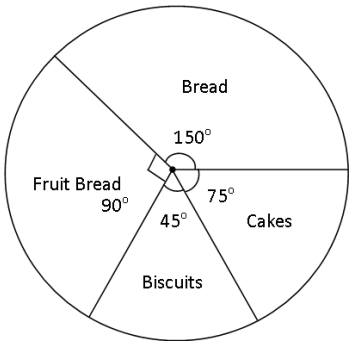


3 Draw a pie diagram to represent the following information :

Item	Bread	Fruit bread	Biscuits	Cakes
Sale (in Rs.)	200	120	60	100

Ans

Item	**Sale (in Rs.)**	**Measure of the central angle**
Bread	200	200480 × 360° = 150°
Fruit bread	120	120480 × 360° = 90°
Biscuits	60	60480 × 360° = 45°
Cakes	100	100480 × 360° = 75°
Total	480	360°



4 The following table shows the weight (in kg) of 100 persons. Find the modal weight of a person.

Weight (in kg)	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65
Number of persons	12	24	40	16	8

Ans

Weight (in kg)	**Number of persons (f)**
40 - 45	12
45 - 50	24 → f_1
50 - 55 Modal class	**40 → f_m**
55 - 60	16→ f_2
60 - 65	8

Here, $f_m = 40$, ∴ the corresponding class 50 - 55 is the modal class.

$L = 50$, $f_1 = 24$, $f_2 = 16$, $h = 5$.

Mode = L + fm - f12fm - f1 - f2 h ... (Formula)

= 50 + 40 - 242(40) - 24 - 16 × 5 ... (Substituting the values)

= 50 + 1680-40×5

= 50 + 1640×5

= 50 + 2 = 52

The modal weight of a person is **52 kg.**

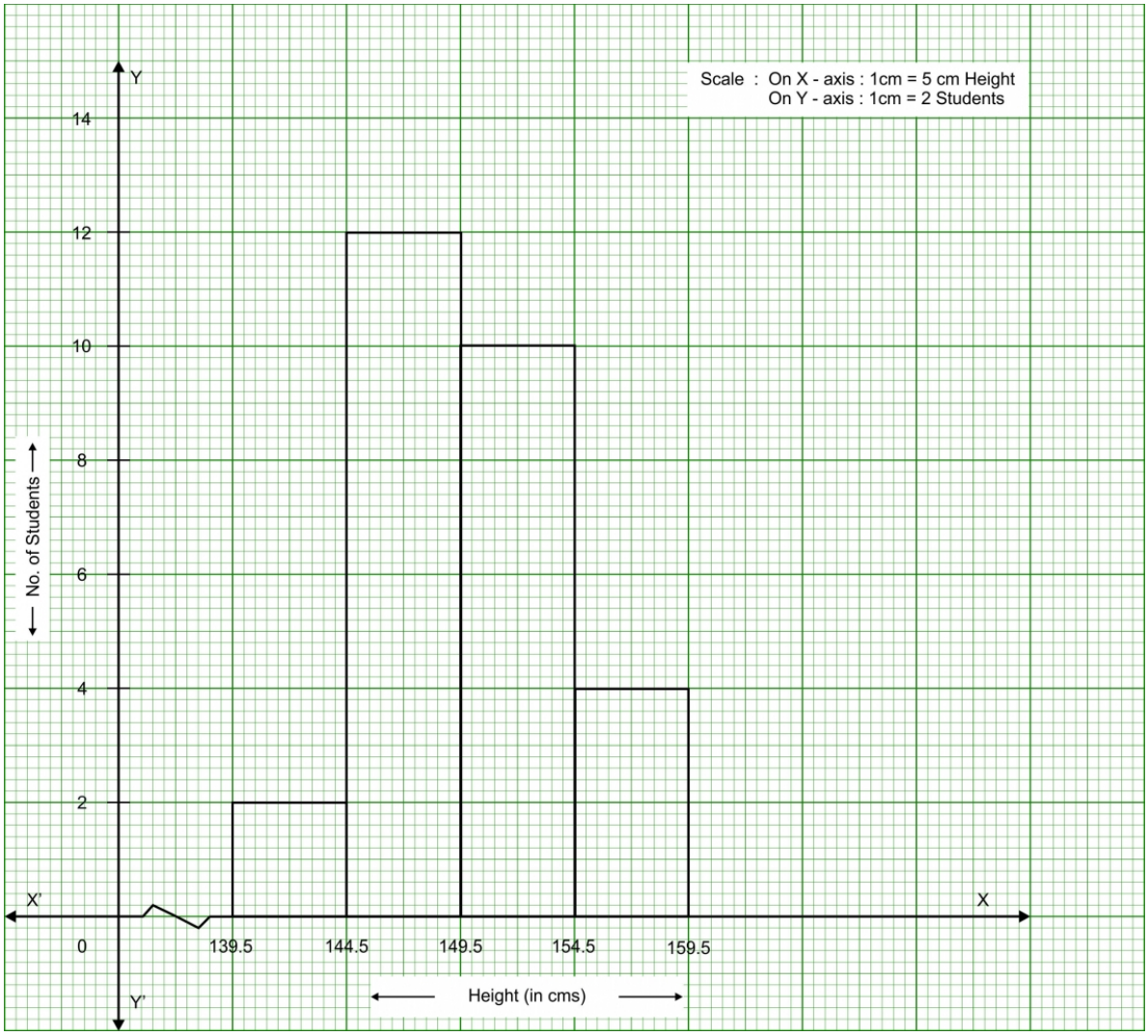
Q.4 Answer the following (Non textual)(Any Two) **8**

1 Represent the following data using a histogram

Height of students (in cm)	140 - 144	145 - 149	150 - 154	155 - 159
Number of students	2	12	10	4

Ans

Height of students (in cm)	**Extended classes**	**Number of students**
140 - 144	139.5 - 144.5	2
145 - 149	144.5 - 149.5	12
150 - 154	149.5 - 154.5	10
155 - 159	154.5 - 159.5	4

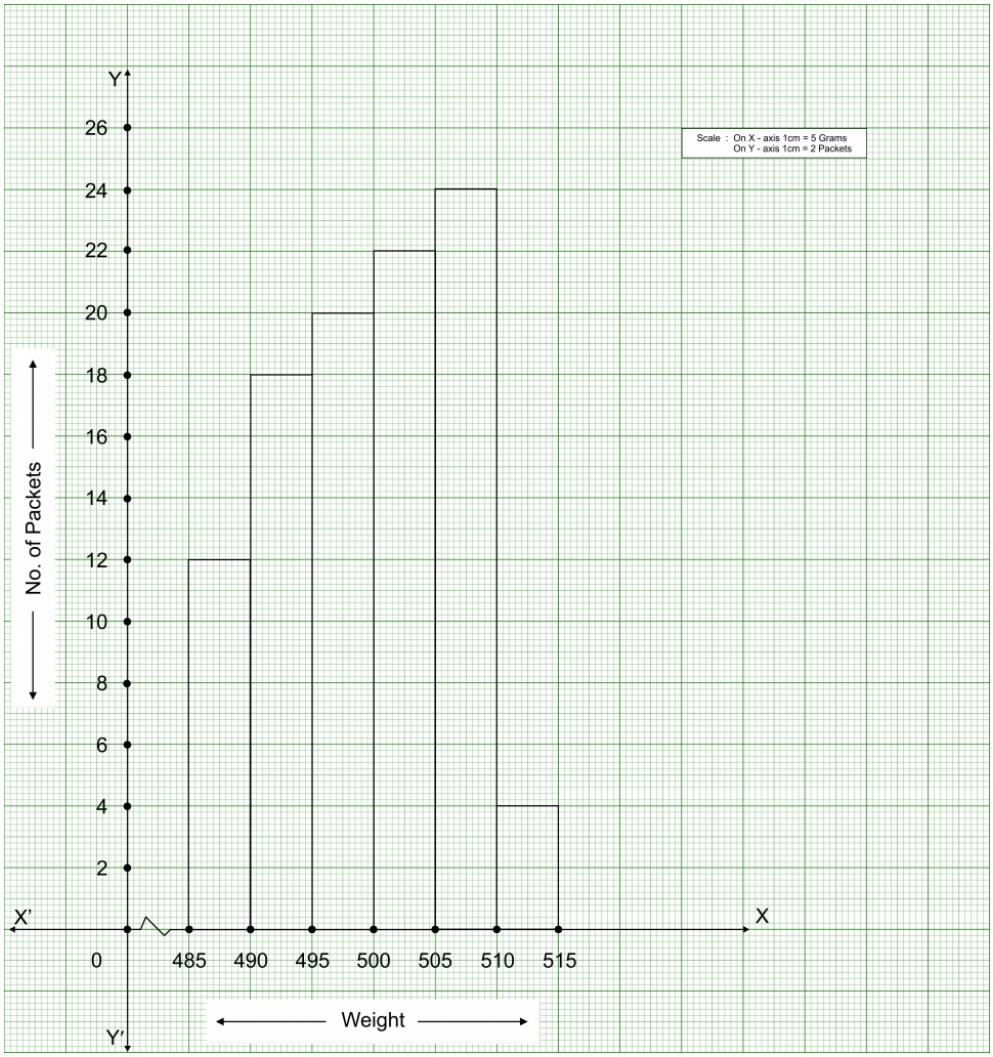


2 Automatic filling machine was tested for its performance A sample 100 filled packets generated the data, Which is classified as follows and Draw histogram.

Weight (in gm)	485-490	490-495	495-500	500-505	505-510	510-515
No. of Packets	12	18	20	22	24	4

Ans

Weight (in gm) Class interval	**No. of packets Frequency**
485-490	12
490-495	18
495-500	20
500-505	22
505-510	24
510-515	4



3 The following data summarizes the results of a certain examination.

Class-marks	5	15	25	35	45	55	65	75
No. of Students	0	2	16	36	27	11	8	0

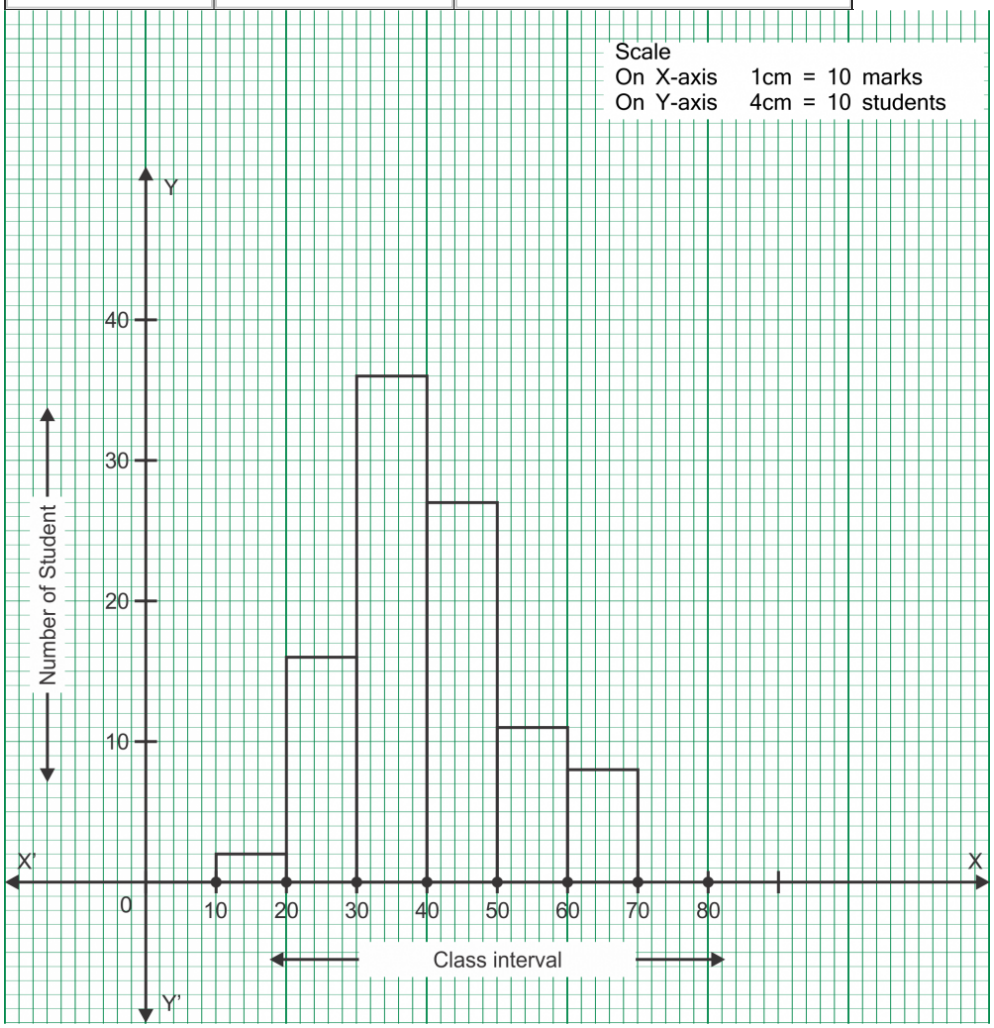
i. Prepare usual distribution table.

ii. Draw histogram.

Ans Rewriting the table with class intervals, we get.

Class marks	Class Intervals	No. of Students Frequency
5	0-10	0
15	10-20	2
25	20-30	16
35	30-40	36
45	40-50	27
55	50-60	11
65	60-70	8

75	70-80	0

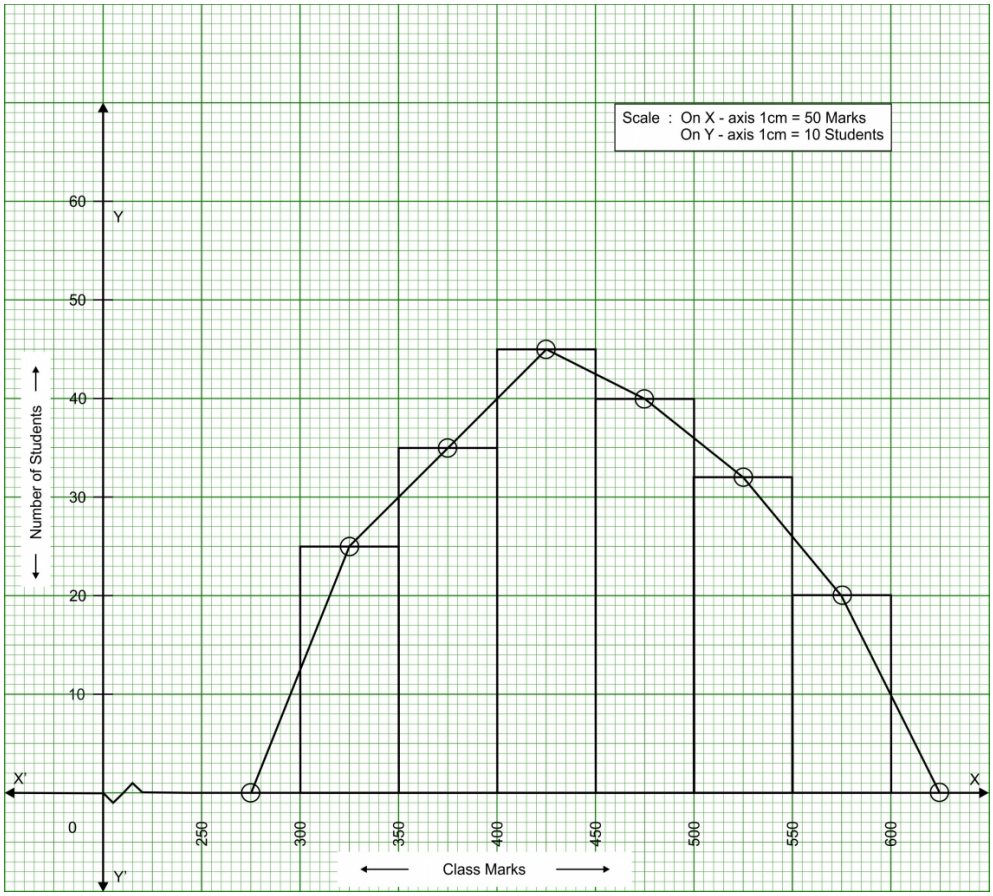


4 The following table is based on the marks of the first term examination of 10th class students. Show the information by a histogram. Also, draw a frequency polygon with the help of the histogram.

Class-mark of marks	325	375	425	475	525	575
No. of students	25	35	45	40	32	20

Ans

Class-Mark	**Classes of Marks**	**No. of students (Frequency)**	**Co-ordinates**
325	300 - 350	25	(325, 25)
375	350 - 400	35	(375, 35)
425	400 - 450	45	(425, 45)
475	450 - 500	40	(475, 40)
525	500 - 550	32	(525, 32)
575	550 - 600	20	(575, 20)



Q.5 **Creative questions** **3**

1 Medical check up of 180 women was conducted in a health centre in a village. 50 of them were short of hemoglobin, 10 suffered from cataract and 25 had respiratory disorders. The remaining women were healthy. Show the information by a pie diagram.

Ans

Results of medical check up	**No. of women**	**Measure of central angle**
Short of hemoglobin	50	$\frac{50}{180} \times 360 = 100^0$
Cataract	10	$\frac{10}{180} \times 360 = 20^0$
Respiratory Disorders	25	$\frac{25}{180} \times 360 = 50^0$
Healthy	95	$\frac{95}{180} \times 360 = 190^0$
Total	**180**	**360^0**