

Exercise 22.1

Question 1.

Arrange the following data as an array (in ascending order):

(i) 7, 5, 15, 12, 10, 11, 16

Solution:-

Ascending order = 5, 7, 10, 11, 12, 15, 16

(ii) 6.3, 5.9, 9.8, 12.3, 5.6, 4.7

Solution:-

Ascending order = 4.7, 5.6, 5.9, 6.3, 9.8, 12.3

Question 2.

Arrange the following data as an array (descending order):

(i) 0, 2, 0, 3, 4, 1, 2, 3, 5

Solution:-

Descending order = 5, 4, 3, 3, 2, 2, 1, 0

(ii) 9.1, 3.7, 5.6, 8.3, 11.5, 10.6

Solution:-

Descending order = 11.5, 10.6, 9.1, 8.3, 5.6, 3.7

Question 3.

Construct a frequency table for the following data:

(i) 6, 7, 5, 6, 8, 9, 5, 5, 6, 7, 8, 9, 8, 10, 10, 9, 8, 10, 5, 7, 6, 8

Solution:-

(i)

Date	Tally Marks	Frequency
5	IIII	4
6	IIII	4
7	III	3
8	IIII	5
9	III	3
10	III	3

(ii) 3, 2, 1, 5, 4, 3, 2, 5, 5, 4, 2, 2, 2, 1, 4, 1, 5, 4

Solution:-

(ii)

Date	Tally Marks	Frequency
1	III	3
2	≡	5
3	II	2
4	IIII	4
5	IIII	4

Question 4.

Following are the marks obtained by 30 students in an examination.

15	20	8	9	10
16	17	20	24	30
44	47	38	36	40
27	25	28	30	19
7	11	21	31	41
37	47	23	20	17

Taking class intervals 0-10, 10-20, 40-50; construct a frequency table.

Solution:-

Class Intervals	Tally marks	Frequency
0-10	III	3
10-20	≡ II	7
20-30	≡ IIII	9
30-40	≡ I	6
40-50	≡	5

Question 5.

Construct frequency distribution table for the following data: taking class-intervals 4-6, 6-8,..... 14-16.

11.5 6.3 7.8 9.2 10.5 4.5, 6 8.3 12.5 15.8
7.4 5.3 8.4 15.2 8.9 9.8 8.25 6.5 5.8 10.5
4.6 6.4 8.9 10.8 12.7 14.2 15.3 11.7 9.9 8.8
6.6 4.3 4.7 9.4 10.1 15.5 14.4 12.2 7.7 5.5

Solution:-

Class Intervals	Tally marks	frequency
4-6	### II	7
6-8	### III	8
8-10	### ###	10
10-12	### I	6
12-14	III	3
14-16	### I	6

Question 6.

Fill in the blanks:

- (i) Lower class limit of 15-18-is _____
- (ii) Upper class limit of 24-30 is _____
- (iii) Upper limit of 5-12.5 is _____
- (iv) If the upper and the lower limits of a class interval are 16 and 10; the class-interval is _____
- (v) If the lower and the upper limits of a class are 7.5 and 12.5; the class interval is _____

Answer:

- (i) Lower class limit of 15 – 18 is **15**.
- (ii) Upper class limit of 24 – 30 is **30**.
- (iii) Upper limit of 5 – 12.5 is **12.5**
- (iv) If the upper and the lower limits of a class interval are 16 and 10; the class-interval is **10 – 16**
- (v) If the lower and the upper limits of a class are 7.5 and 12.5; the class interval is **7.5 – 12.5**

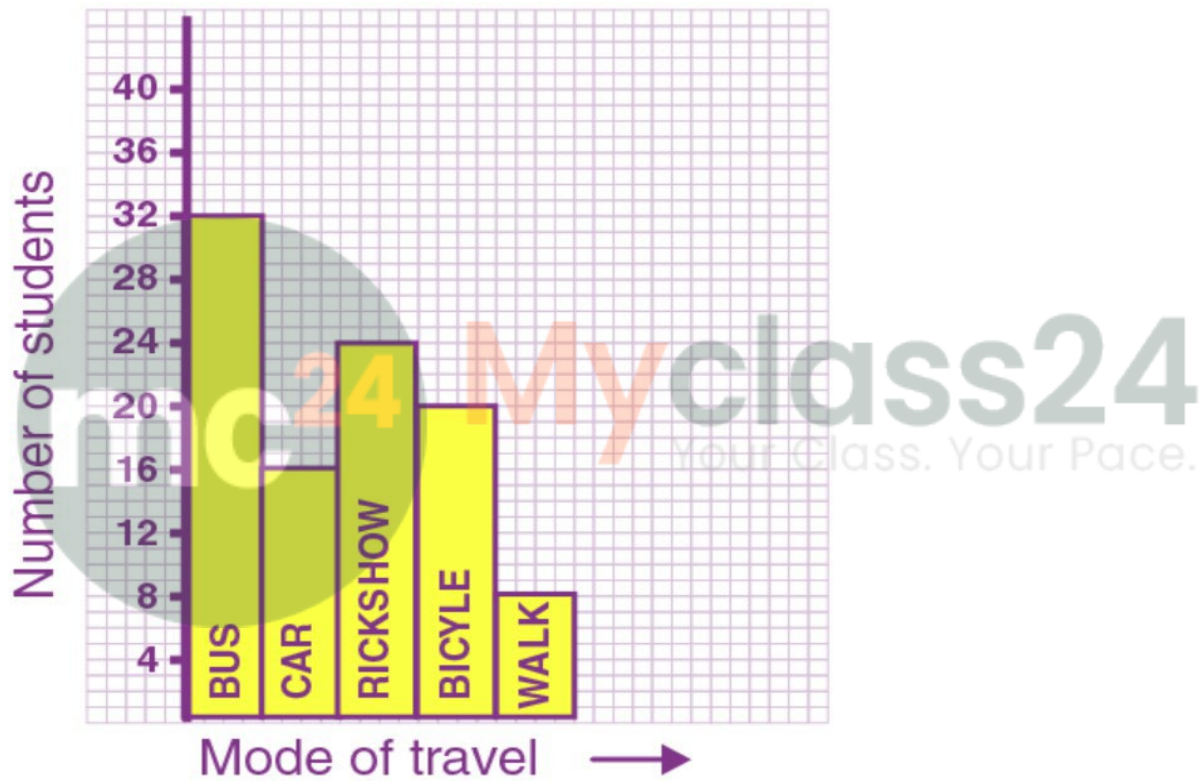
Exercise 22.2

Question 1.

Hundred students from a certain locality use different modes of travelling to school as given below. Draw a bar graph.

Bus	Car	Rickshaw	Bicycle	Walk
32	16	24	20	8

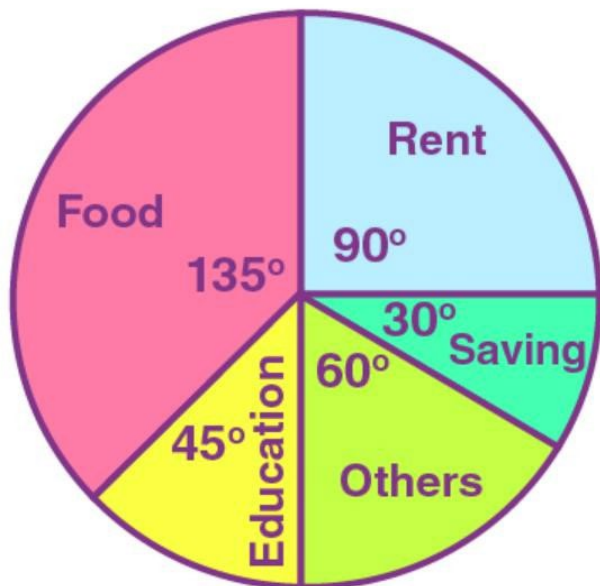
Solution:-



Question 2.

Mr. Mirza's monthly income is Rs. 7,200. He spends Rs.1,800 on rent, Rs.2,700 on food, Rs.900 on education of his children; Rs. 1,200 on other things and saves the rest. Draw a pie-chart to represent it.

Solution:-



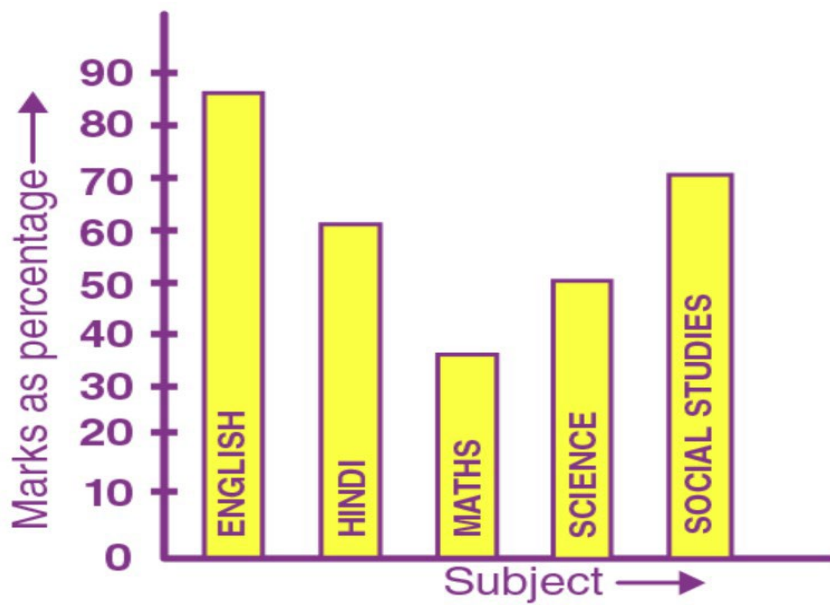
Name of items	Expenditure/saving in Rupees	Central angle
Rent	1800	$\frac{1800}{7200} \times 360^\circ = 90^\circ$
Food	2700	$\frac{2700}{7200} \times 360^\circ = 135^\circ$
Education	900	$\frac{900}{7200} \times 360^\circ = 45^\circ$
Others	1200	$\frac{1200}{7200} \times 360^\circ = 60^\circ$
Saving	600	$\frac{600}{7200} \times 360^\circ = 30^\circ$
Total	7200	360°

Question 3.

The percentage of marks obtained, in different subjects by Ashok Sharma (in an examination) are given below. Draw a bar graph to represent it.

English	Hindi	Maths	Science	Social studies
85	60	35	50	70

Solution:-



Question 4.

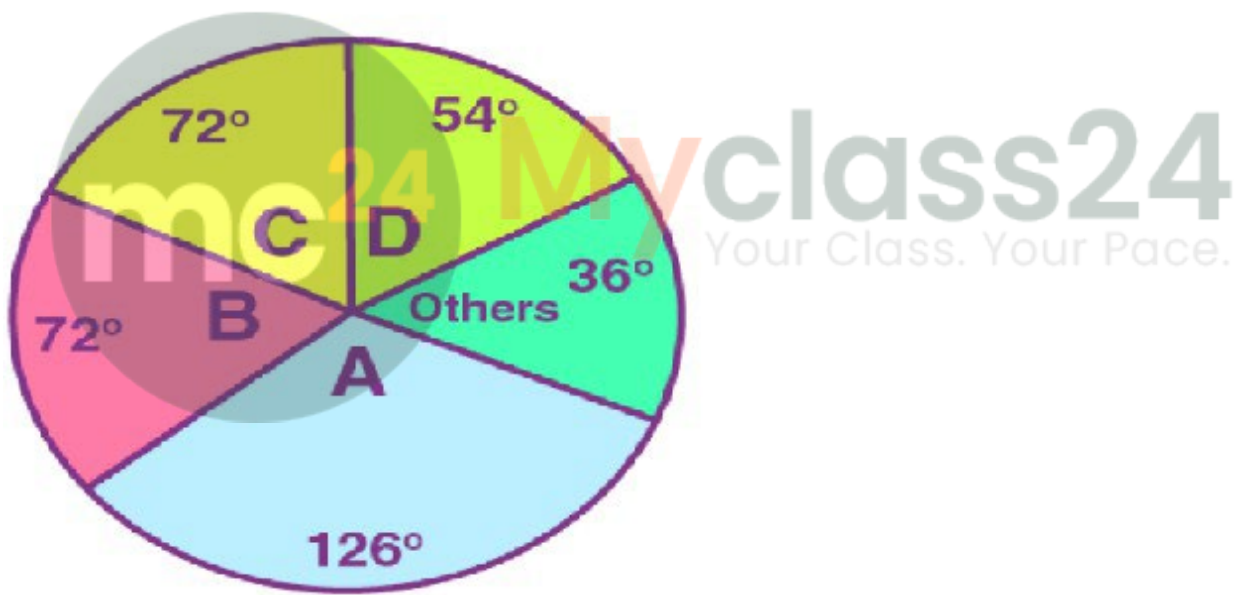
The following table shows the market position of different brand of teal leaves.

Brand	A	B	C	D	Others
% Buyers	35	20	20	15	10

Draw it-pie-chart to represent the above information.

Solution:-

Name of brand	% Buyers	Central angle
A	35	$\frac{35}{100} \times 360^\circ = 126^\circ$
B	20	$\frac{20}{100} \times 360^\circ = 72^\circ$
C	20	$\frac{20}{100} \times 360^\circ = 72^\circ$
D	15	$\frac{15}{100} \times 360^\circ = 54^\circ$
Others	10	$\frac{10}{100} \times 360^\circ = 36^\circ$
	100	360°



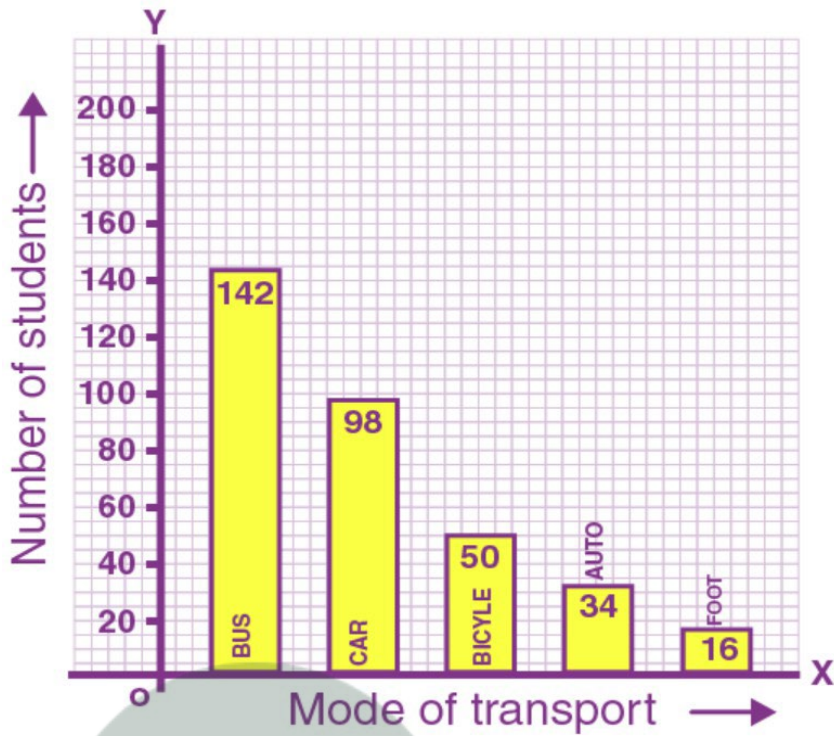
Question 5.

Students of a small school use different modes of travel to school as shown below:

Mode	Bus	Car	Bicycle	Auto	On foot
No. of students	142	98	50	34	16

Draw a suitable bar graph.

Solution:-

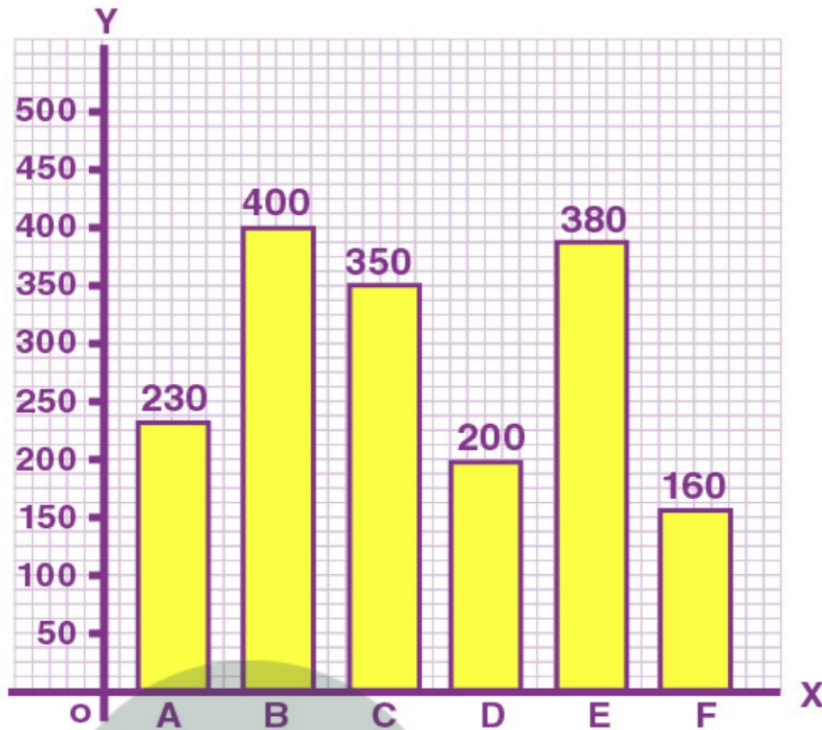


Question 6.

For the following table, draw a bar-graph

A	B	C	D	E	F
230	400	350	200	380	160

Solution:-



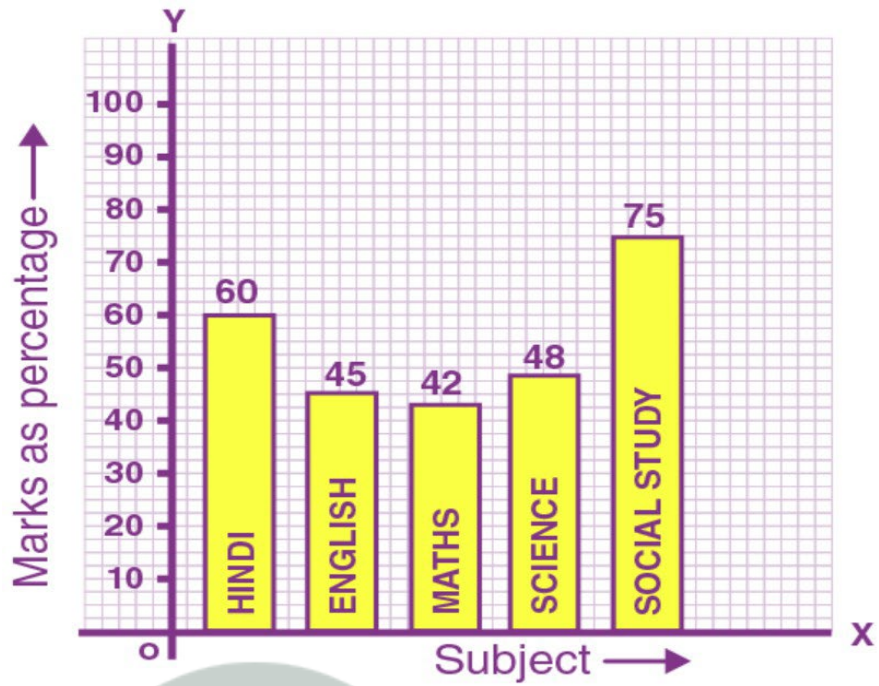
Question 7.

Manoj appeared for ICSE examination 2018 and secured percentage of marks as shown in the following table:

Subject	Hindi	English	Maths	Science	Social study
Marks as percent	60	45	42	48	75

Represent the above data by drawing a suitable bar graph.

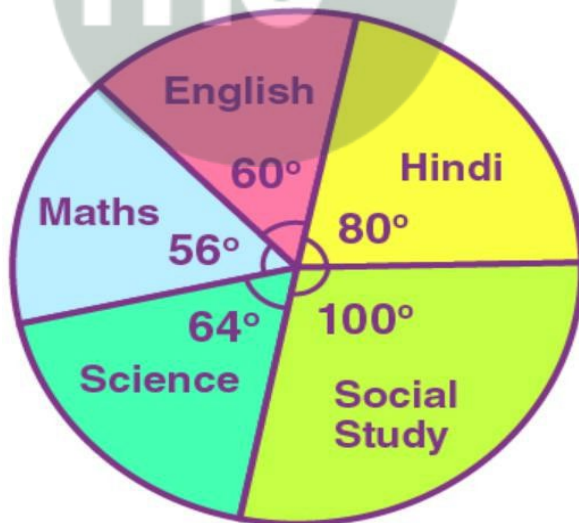
Solution:-



Question 8.

For the data given above in question number 7, draw a suitable pie-graph.

Solution:-



$$\therefore 60+45+42+48+75=270$$

$$\therefore \text{Central angle for Hindi} = \frac{60}{270} \times 360^\circ = 80^\circ$$

$$\text{Central angle for English} = \frac{45}{270} \times 360^\circ = 60^\circ$$

$$\text{Central angle for Maths} = \frac{42}{270} \times 360^\circ = 45^\circ$$

$$\text{Central angle for science} = \frac{48}{270} \times 360^\circ = 64^\circ$$

$$\text{And Central angle for social study} = \frac{75}{270} \times 360^\circ = 100^\circ$$

Question 9.

Mr. Kapoor compares the prices (in Rs.) of different items at two different shops A and B. Examine the following table carefully and represent the data by a double bar graph.

Items	Price (in Rupees) at shop A	Price (in Rupees) at shop B
Tea-set	900	950
Mixie	700	800
Coffee-marker	600	700
Dinner set	600	500

Solution:-

