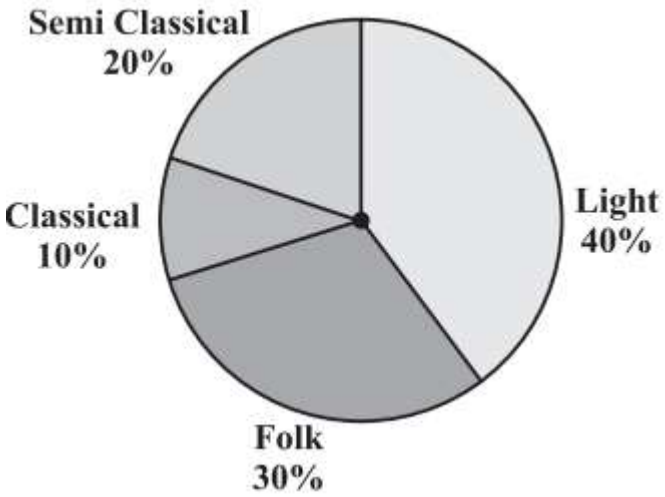
Data Handling: Exercise 5.2

Q.1 A survey was made to find the type of music that a certain group of young people liked in a city. Adjoining pie chart shows the findings of this survey. From this pie chart answer the following:
(i) If 20 people liked classical music, how many young people were surveyed?
(ii) Which type of music is liked by the maximum number of people?
(iii) If a cassette company were to make 1000 CD's, how many of each type would they make?



Sol. **(i)** It is cleared from the pie chart, the number of people who like class music is 10%. It means that 10% represents 20 people.

So, 100% represents number of people = $\frac{20}{10} \times 100 = 200$ people

Thus, 200 young people were surveyed who like class music.

(ii) It is cleared from the pie chart, light music is liked by the maximum number of people which is 40%.

(iii) Given: A cassette company were to make 1000 CD's.

For classical music, no. of CD's is 10% of 1000 = $\frac{10}{100} \times 1000 = 100$

For semi - classical music, no of CD's is 20% of 1000 = $\frac{20}{100} \times 1000 = 200$

For folk music, no of CD's is 30% of 1000 = $\frac{30}{100} \times 1000 = 300$

For light music, no of CD's is 40% of 1000 = $\frac{40}{100} \times 1000 = 400$

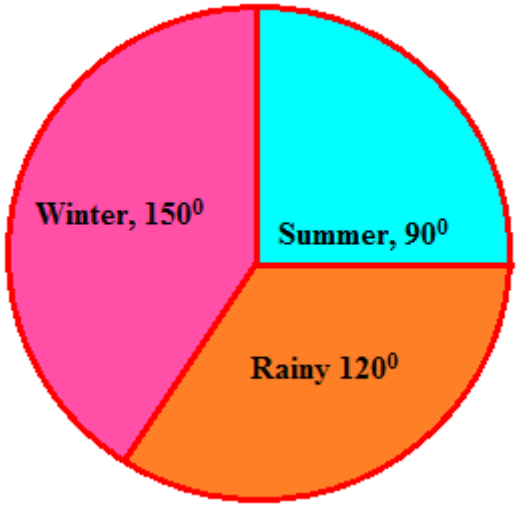
Q.2 A group of 360 people were asked to vote for their favourite season from the three seasons rainy, winter and summer.
(i) Which season got the most votes?
(ii) Find the central angle of each sector.
(iii) Draw a pie chart to show this information

Season	No. of votes
Summer 	90
Rainy 	120
Winter 	150

Sol. (i) Winter season got the most votes which is 150 votes.
(ii) Since, the total number of votes are = 90 + 120 + 150 = 360
The table below for the central angle of each sector:

Season	No. of votes	In fraction	Central angle
Summer	90	$\frac{90}{360}$	$\frac{90}{360} \times 360^0 = 90^o$
Rainy	120	$\frac{120}{360}$	$\frac{120}{360} \times 360^0 = 120^o$
Winter	150	$\frac{150}{360}$	$\frac{150}{360} \times 360^0 = 150^o$

(iii) The pie chart for the given data:



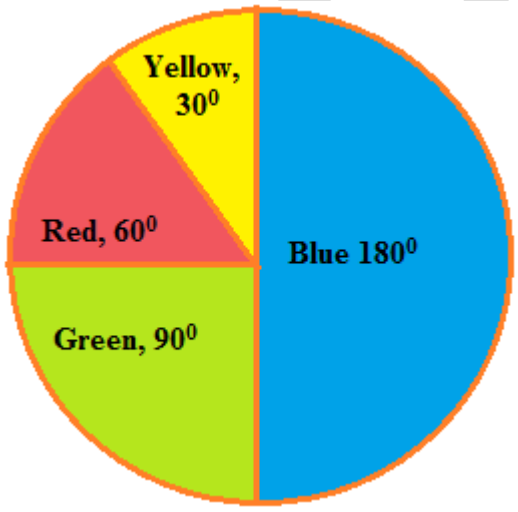
Q.3 Draw a pie chart showing the following information. The table shows the colours preferred by a group of people.

Colours	Number of people
Blue	18
Green	9
Red	6
Yellow	3
Total	**36**

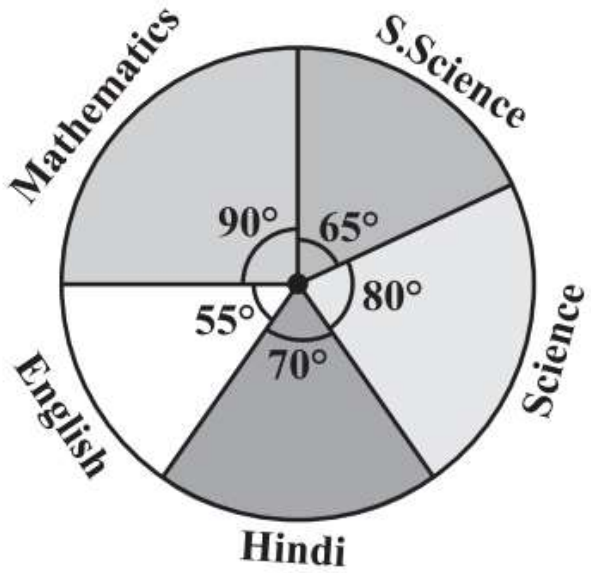
Sol. Since, Total number of peoples = 36
The table for the central angle for each colour:

Colours	Number of People	In Fraction	Central angle
Blue	18	$\frac{18}{36}$	$\frac{18}{36}\text{x}360^0 = 180^0$
Green	9	$\frac{9}{36}$	$\frac{9}{36}\text{x}360^0 = 90^0$
Red	6	$\frac{6}{36}$	$\frac{6}{36}\text{x}360^0 = 60^0$
Yellow	3	$\frac{3}{36}$	$\frac{3}{36}\text{x}360^0 = 30^0$

The pie chart for the given data is shown below:



Q.4 The adjoining pie chart gives the marks scored in an examination by a student in Hindi, English, Mathematics, Social Science and Science. If the total marks obtained by the students were 540, answer the following questions.
(i) In which subject did the student score 105 marks? (Hint: for 540 marks, the central angle = 360°. So, for 105 marks, what is the central angle?)
(ii) How many more marks were obtained by the student in Mathematics than in Hindi?
(iii) Examine whether the sum of the marks obtained in Social Science and Mathematics is more than that in Science and Hindi. (Hint: Just study the central angles).



Sol. (i) Since, total marks are 540. So, 540 marks which represents 360°.

Thus, central angle for 105 marks will be = $\frac{105}{540} \text{x} 360^0 = 70°$

It is cleared from the pie-chart, Hindi subject have central angle 70°.
Thus, the students have scored 105 marks in Hindi.

(ii) Since, central angle for the Mathematics subject is 90°.

So, marks obtained in Mathematics Subject = $\frac{90^0}{360^0} \text{x} 540$ = 135 Marks

And marks scored in Hindi subject = $\frac{70^0}{360^0} \text{x} 540$ = 105 Marks

So, difference of scored marks = 135 – 105 = 30
Thus, 30 more marks were scored by the student in Mathematics than in Hindi.

(iii) The sum of central angles of Social Science and Mathematics = 90° +135° = 155°
And sum of central angles of Science and Hindi = 80° + 70° = 150°
Since from above pie chart, the sum of the central angles of Social Science (i.e. 155°) and Mathematics is more than that in Science and Hindi (i.e. 150°).
Thus, the sum of the marks obtained in Social Science and Mathematics will be more than that in Science and Hindi.

Q.5 The number of students in a hostel, speaking different languages is given below. Display the data in a pie chart.

Language	Hindi	English	Marathi	Tamil	Bengali	Total
Number of students	40	12	9	7	4	72

Sol. Since, Total number of students = 72
The table represents the central angle for each subject:

Language	Number of students	In fraction	Central angle

Hindi	40	$\frac{40}{72}$	$\frac{40}{72} \times 360^0 = 200^\circ$
English	12	$\frac{12}{72}$	$\frac{12}{72} \times 360^0 = 60^\circ$
Marathi	9	$\frac{9}{72}$	$\frac{9}{72} \times 360^0 = 45^\circ$
Tamil	7	$\frac{7}{72}$	$\frac{7}{72} \times 360^0 = 35^\circ$
Bengali	4	$\frac{4}{72}$	$\frac{4}{72} \times 360^0 = 20^\circ$

The pie chart of the above data: