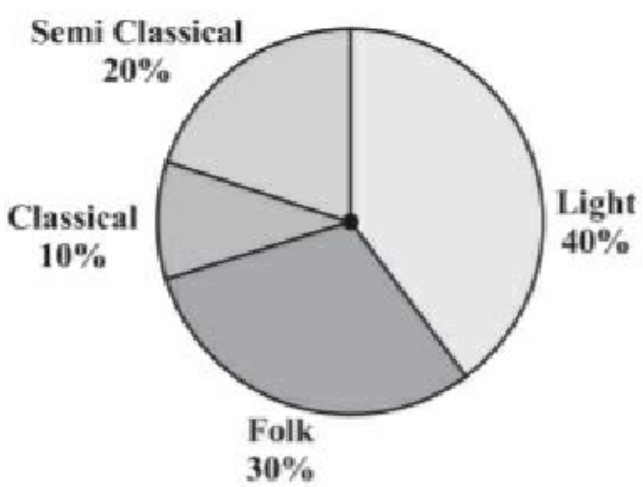
Exercise 4.1 (Revised) - Chapter 5 - Data Handling - Ncert Solutions class 8 - Maths

Updated On 11-02-2025 By Lithanya

Chapter 4 - Data Handling | NCERT Solutions for Class 8 Maths

Ex 4.1 Question 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?

Answer.

(i) 10% represents 20 people.

$$\text{Therefore } 100\% \text{ represents } = \frac{100 \times 20}{10}$$

$$= 200 \text{ people}$$

Hence, 200 people were surveyed.

(ii) Light music is liked by the maximum number of people.

(iii) CD's of classical music $= \frac{10 \times 1000}{100}$

$$= 100$$

$$\text{CD's of semi-classical music } = \frac{20 \times 1000}{100} = 200$$

$$\text{CD's of light music } = \frac{40 \times 1000}{100} = 400$$

$$\text{CD's of folk music } = \frac{30 \times 1000}{100} = 300$$

Ex 4.1 Question 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	Number of votes
Summer	90
Rainy	120
Winter	150

Answer.

(i) Winter season got the most votes.

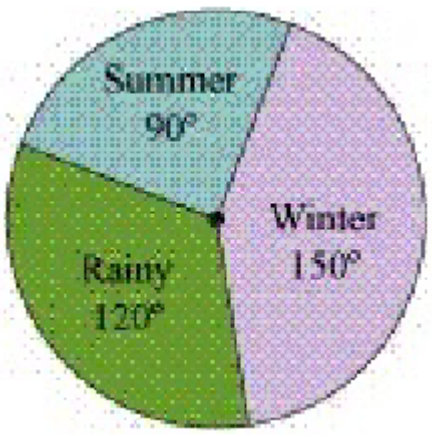
(ii) Central angle of summer season $= \frac{90^\circ \times 360^\circ}{360^\circ} = 90^\circ$

$$\text{Central angle of rainy season } = \frac{120^\circ \times 360^\circ}{360^\circ} = 120^\circ$$

$$\text{Central angle of winter season } = \frac{150^\circ \times 360^\circ}{360^\circ} = 150^\circ$$

Season	Number of votes	In fraction	Central angle
Summer	90	$\frac{90}{360}$	$\frac{90}{360} \times 360^\circ = 90^\circ$
Rainy	120	$\frac{120}{360}$	$\frac{120}{360} \times 360^\circ = 120^\circ$
Winter	150	$\frac{150}{360}$	$\frac{150}{360} \times 360^\circ = 150^\circ$

(iii)



Ex 4.1 Question 3.

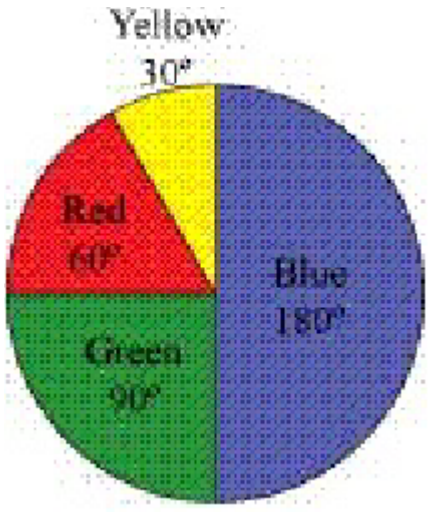
Draw a pie chart showing the following information. The table shows the colours preferred by a group of people.

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

Answer:

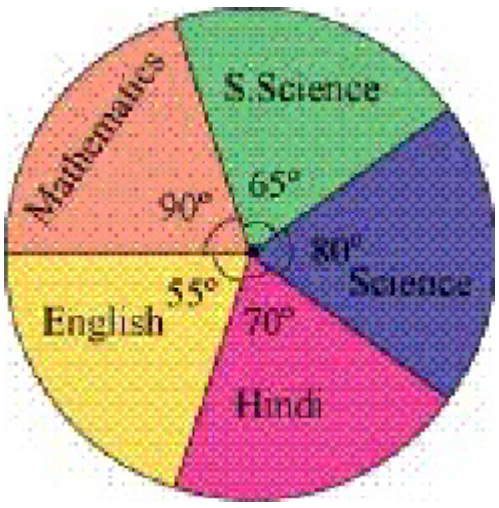
Here, central angle $= 360^\circ$ and total number of people $= 36$

Colours	Number of people	In fraction	Central angle
Blue	18	$\frac{18}{36}$	$\frac{18}{36} \times 360^\circ = 180^\circ$
Green	9	$\frac{9}{36}$	$\frac{9}{36} \times 360^\circ = 90^\circ$
Red	6	$\frac{6}{36}$	$\frac{6}{36} \times 360^\circ = 60^\circ$
Yellow	3	$\frac{3}{36}$	$\frac{3}{36} \times 360^\circ = 30^\circ$



Ex 4.1 Question 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 $= 360^{\circ}$. 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)

Answer.

Subject	Central Angle	Marks obtained
Mathematics	90°	$\frac{90^{\circ}}{360^{\circ}} \times 540 = 135$
Social Science	65°	$\frac{65^{\circ}}{360^{\circ}} \times 540 = 97.5$
Science	80°	$\frac{80^{\circ}}{360^{\circ}} \times 540 = 120$
Hindi	70°	$\frac{70^{\circ}}{360^{\circ}} \times 540 = 105$
English	55°	$\frac{55^{\circ}}{360^{\circ}} \times 540 = 82.5$

(i) The student scored 105 marks in Hindi.

(ii) Marks obtained in Mathematics $= 135$

Marks obtained in Hindi $= 105$

Difference $= 135 - 105 = 30$

Thus, 30 more marks were obtained by the student in Mathematics than in Hindi.

(iii) The sum of marks in Social Science and Mathematics $= 97.5 + 135 = 232.5$

The sum of marks in Science and Hindi $= 120 + 105 = 225$

Yes, the sum of the marks in Social Science and Mathematics is more than that in Science and Hindi.

Ex 4.1 Question 5.

The number of students in a hostel, speaking different languages is given below.

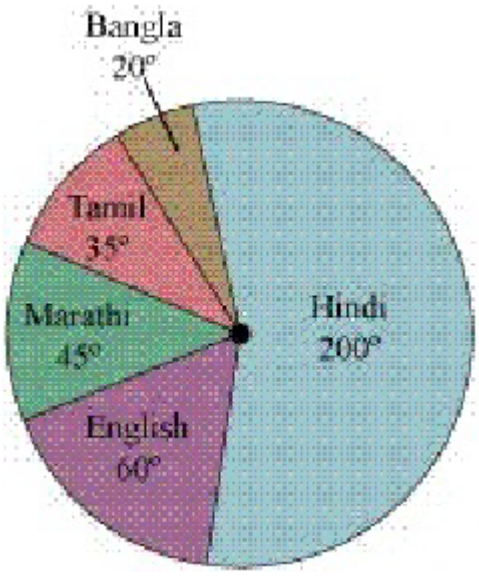
Display the data in a pie chart.

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

Answer

Language	Number of students	In fraction	Central angle
Hindi	40	$\frac{40}{72}$	$\frac{40}{72} \times 360^\circ = 200^\circ$
English	12	$\frac{12}{72}$	$\frac{12}{72} \times 360^\circ = 60^\circ$
Marathi	9	$\frac{9}{72}$	$\frac{9}{72} \times 360^\circ = 45^\circ$
Tamil	7	$\frac{7}{72}$	$\frac{7}{72} \times 360^\circ = 35^\circ$
Bengali	4	$\frac{4}{72}$	$\frac{4}{72} \times 360^\circ = 20^\circ$

Pie chart at above given data is as follows.



Exercise 4.2 (Revised) - Chapter 5 - Data Handling - Ncert Solutions class 8 - Maths

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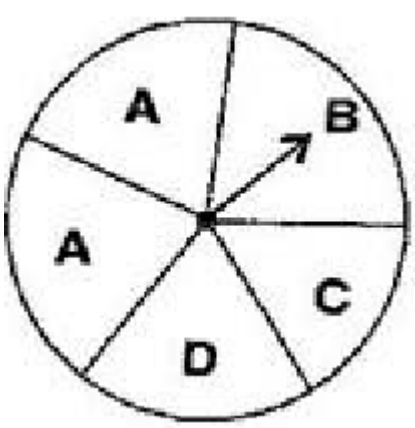
Ex 4.2 Question 1.

List the outcomes you can see in these experiments.
(a) Spinning a wheel



(b) Tossing two coins together

Answer.

(a) There are four letters A, B, C and D in a spinning wheel. So there are 4 outcomes.
(b) When two coins are tossed together. There are four possible outcomes $\mathrm{HH}, \mathrm{HT}, \mathrm{TH}, \mathrm{TT}$.
(Here HT means head on first coin and tail on second coin and so on.)

Ex 4.2 Question 2.

When a die is thrown, list the outcomes of an event of getting:
(i) (a) a prime number
(b) not a prime number
(ii) (a) a number greater than 5
(b) a number not greater than 5

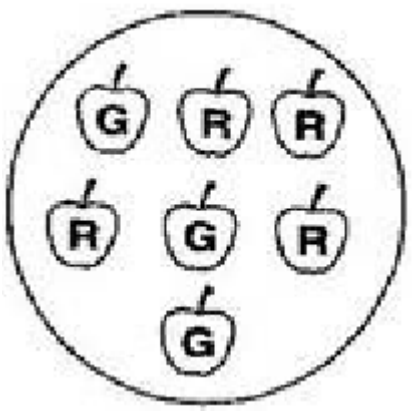
Answer.

(i) (a) Outcomes of event of getting a prime number are 2, 3 and 5 .
(b) Outcomes of event of not getting a prime number are 1, 4 and 6 .

(ii) (a) Outcomes of event of getting a number greater than 5 is 6 .
(b) Outcomes of event of not getting a number greater than 5 are 1, 2, 3, 4 and 5 .

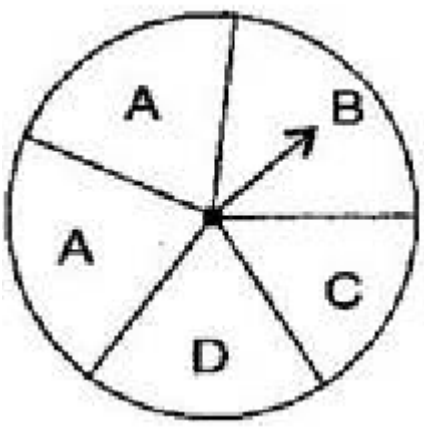
Ex 4.2 Question 3.

Find the:
(a) Probability of the pointer stopping on D in (Question 1 (a)).
(b) Probability of getting an ace from a well shuffled deck of 52 playing cards.
(c) Probability of getting a red apple. (See figure below)



Answer.

(a) In a spinning wheel, there are five pointers A, A, B, C, D. So there are five outcomes. Pointer stops at D which is one outcome.



So the probability of the pointer stopping on $\mathrm{D} = \frac{1}{5}$

(b) There are 4 aces in a deck of 52 playing cards. So, there are four events of getting an ace.

So, probability of getting an ace $= \frac{4}{52} = \frac{1}{13}$

(c) Total number of apples $= 7$

Number of red apples $= 4$

Probability of getting red apple $= \frac{4}{7}$

Ex 4.2 Question 4.

Numbers 1 to 10 are written on ten separate slips (one number on one slip), kept in a box and mixed well. One slip is chosen from the box without looking into it. What is the probability of:

(i) getting a number 6 .

(ii) getting a number less than 6 .

(iii) getting a number greater than 6 .

(iv) getting a 1-digit number.

Answer.

(i) Outcome of getting a number 6 from ten separate slips is one.

Therefore, probability of getting a number $6 = \frac{1}{10}$

(ii) Numbers less than 6 are 1, 2, 3, 4 and 5 which are five. So there are 5 outcomes.

Therefore, probability of getting a number less than $6 = \frac{5}{10} = \frac{1}{2}$

(iii) Number greater than 6 out of ten that are 7, 8, 9, 10. So there are 4 possible outcomes.

Therefore, probability of getting a number greater than $6 = \frac{4}{10} = \frac{2}{5}$

(iv) One digit numbers are $1, 2, 3, 4, 5, 6, 7, 8, 9$ out of ten.

Therefore, probability of getting a 1-digit number $= \frac{9}{10}$

Ex 4.2 Question 5.

If you have a spinning wheel with 3 green sectors, 1 blue sector and 1 red sector, what is the probability of getting a green sector? What is the probability of getting a noneblue sector?

Answer.

There are five sectors. Three sectors are green out of five sectors.

Therefore, probability of getting a green sector $= \frac{3}{5}$

There is one blue sector out of five sectors.

Non-blue sectors $= 5 - 1 = 4$ sectors

Therefore, probability of getting a non-blue sector $= \frac{4}{5}$

Ex 4.2 Question 6.

Find the probability of the events given in Question 2.

Answer.

When a die is thrown, there are total six outcomes, i.e., 1, 2, 3, 4, 5 and 6 .

(i) (a) 2, 3, 5 are prime numbers. So there are 3 outcomes out of 6 .

Therefore, probability of getting a prime number $= \frac{3}{6} = \frac{1}{2}$

(b) 1, 4, 6 are not the prime numbers. So there are 3 outcomes out of 6 .

Therefore, probability of getting a prime number $= \frac{3}{6} = \frac{1}{2}$

(ii) (a) Only 6 is greater than 5 . So there is one outcome out of 6 .

Therefore, probability of getting a number greater than $5 = \frac{1}{6}$

(b) Numbers not greater than 5 are 1, 2, 3, 4 and 5 . So there are 5 outcomes out of 6 .

Therefore, probability of not getting a number greater than $5 = \frac{5}{6}$