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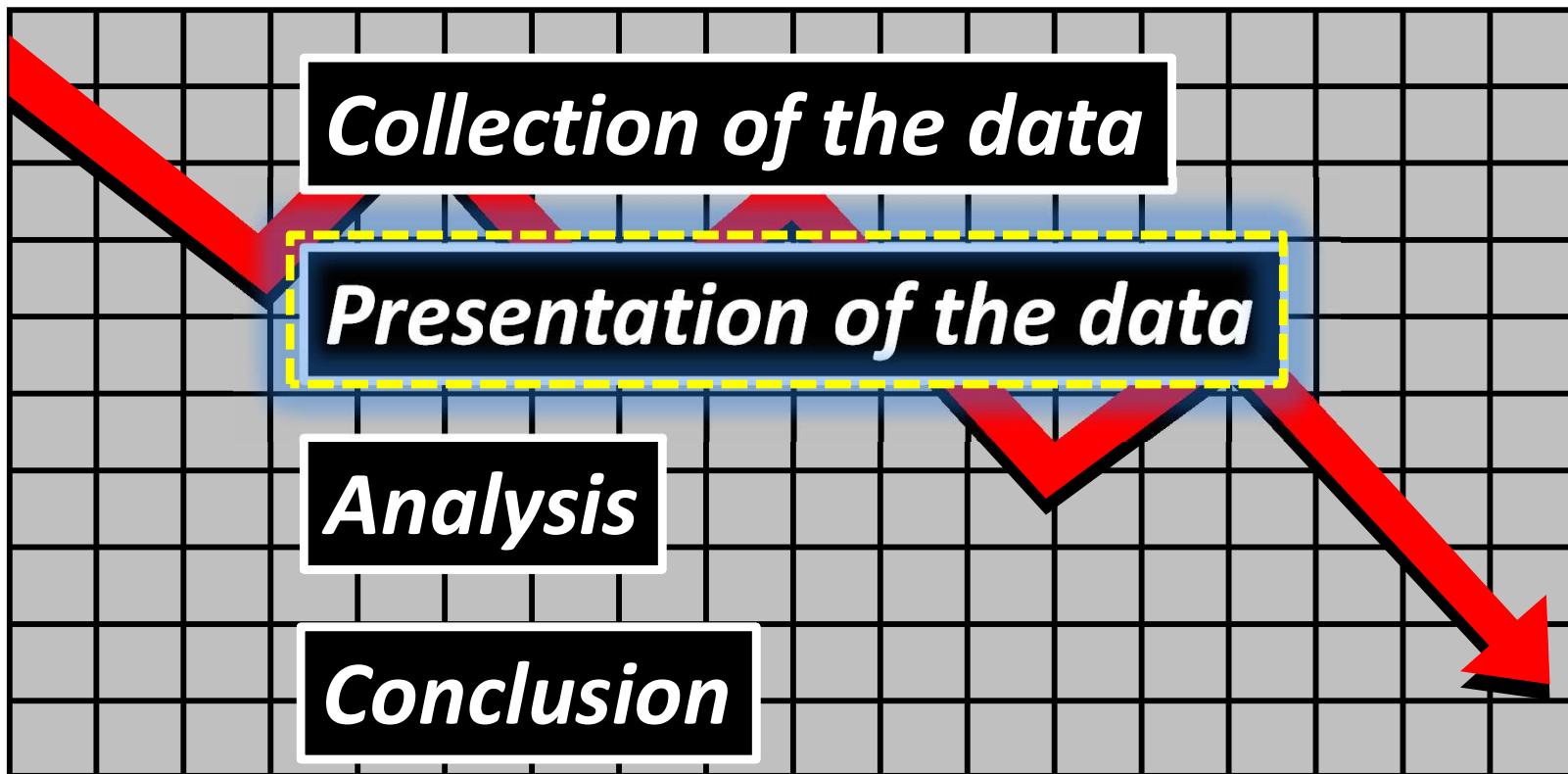
Lecture

Chapter 5 : DATA HANDLING



Module 1

What is Statistics ?



Any information given is called data



Numerical Presentation

- Arranging Data in Ascending or Descending order
- Ungrouped frequency Distribution table
- Grouped frequency Distribution table

Age in Years	Frequency
0-10	9
10-20	6
20-30	3
30-40	0
40-50	2

Module 2

For e.g.

Ungrouped Frequency Distribution Table

Ages of some students are collected as follows :

13, 12, 13, 12, 13, 12, 14, 12, 14,
12, 13, 12, 13, 12, 14, 13

Find the
biggest number

Age in years	Tally Marks	Frequency
12		7
13		6
14		3
	Total (N)	16

In the first column we write all the numbers in the data starting from the smallest to the biggest once only.

Q. The shoppers who come to a departmental store are marked as:
 man (M), woman (W), boy (B) or girl (G). The following list gives the
 shoppers who came during the first hour in the morning.
 Make a frequency distribution table using tally marks.
 Draw a bar graph to illustrate it.

W	W	W	G	B	W	W	M	G	G	M	M	W	W	W	W	G	B	M	W
R	G	G	M	W	W	M	M	W	W	W	M	W	R	W	G	M	W	W	W
W	G	W	M	M	W	M	W	G	W	M	G	W	M	M	R	G	G	W	W

Sol:

The frequency distribution table is as follows:

Shopper	Tally Marks	Number of shoppers
M		15
W		28
B		5
G	II	12
Total		60

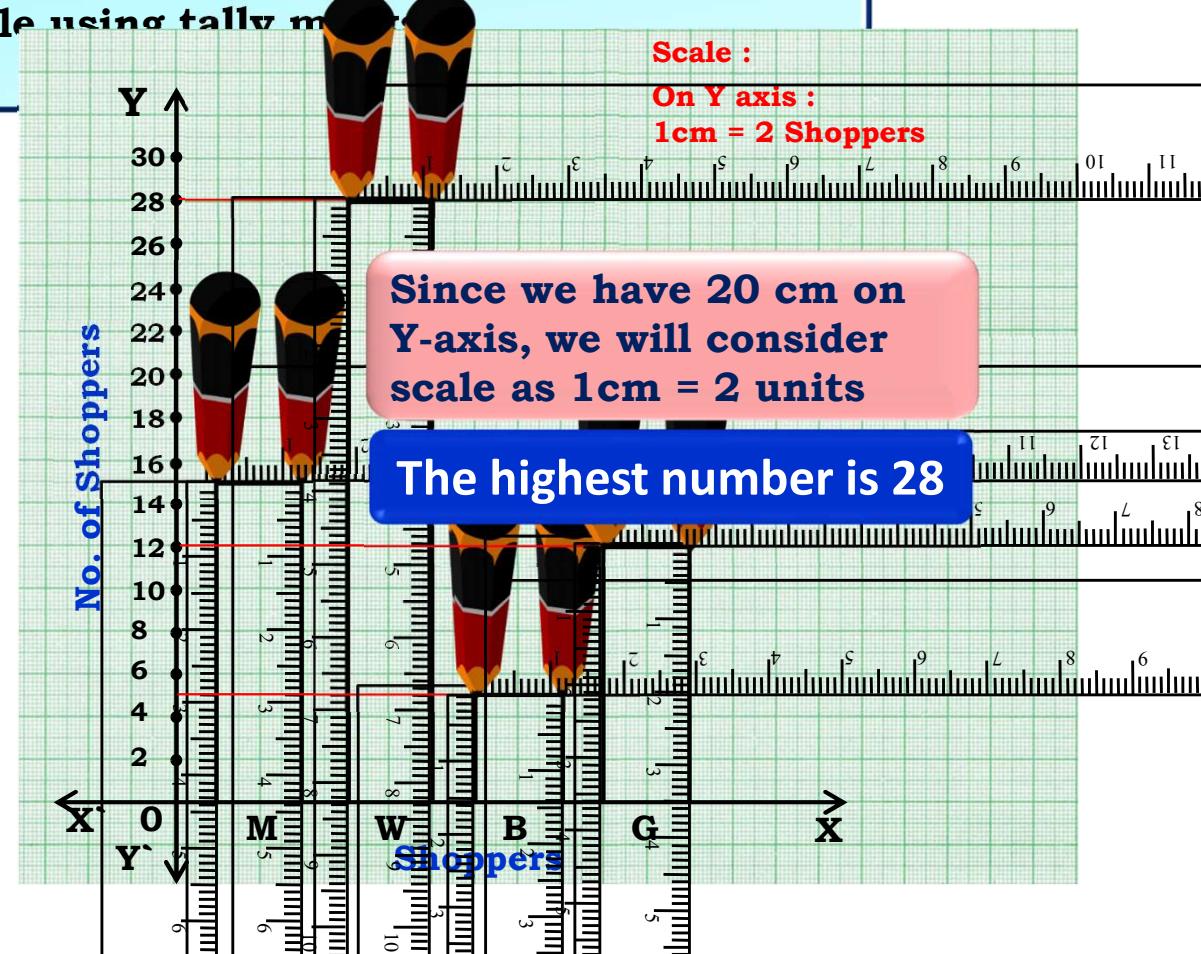
Module 3

Q. The shoppers who come to a departmental store are marked as: man (M), woman (W), boy (B) or girl (G). The following list gives the shoppers who came during the first hour in the morning.
 Make a frequency distribution table using tally marks.
 Draw a bar graph to illustrate it.

Sol:

The frequency distribution table is as follows:

Shopper	Number of shoppers
M	15
W	28
B	5
G	12
Total	60



Module 4

Grouped frequency Distribution Table

29, 4, 12, 25, 14, 13, 21, 5, 3, 24, 2, 10

In the first column, the data is classified into small groups each group is called as a class.

continuous class

For e.g. 1-10, 10 -20 etc. each one i.e. 1-10, 10-20, 20-30 is called as a class. every class has its own lower limit and its own upper limit.

When the classes are continuous we exclude upper limit.

i.e. for class 0-10, 10 is the upper limit. Hence, data 10 is recorded in the next class 10-20.

Class (Marks obtained)	Tally Marks	Frequency
0 - 10		5
10 - 20		9
20 - 30		6
	Total	20

Module 5

Q. The weekly wages (in Rs.) of 30 workers in a factory are:

Using tally marks, make a frequency table with intervals as
800 – 810, 810 – 820 and so on.

~~830, 835, 890, 810, 835, 836, 869, 845, 898, 890, 820, 860, 832, 833, 855,~~
~~845, 804, 808, 812, 840, 885, 835, 835, 836, 878, 840, 868, 890, 806, 840.~~

Sol: The frequency distribution table is as follows:

Class Intervals	Tally Marks	Frequency
800 – 810		3
810 – 820		2
820 – 830		1
830 – 840		9
840 – 850		5
850 – 860		1
860 – 870		3
870 – 880		1
880 – 890		1
890 – 900		4
Total		30

Module 6

HISTOGRAM

Histogram is a series of joint rectangles to represent continuous frequency distribution.

Classes are continuous

For e.g. :

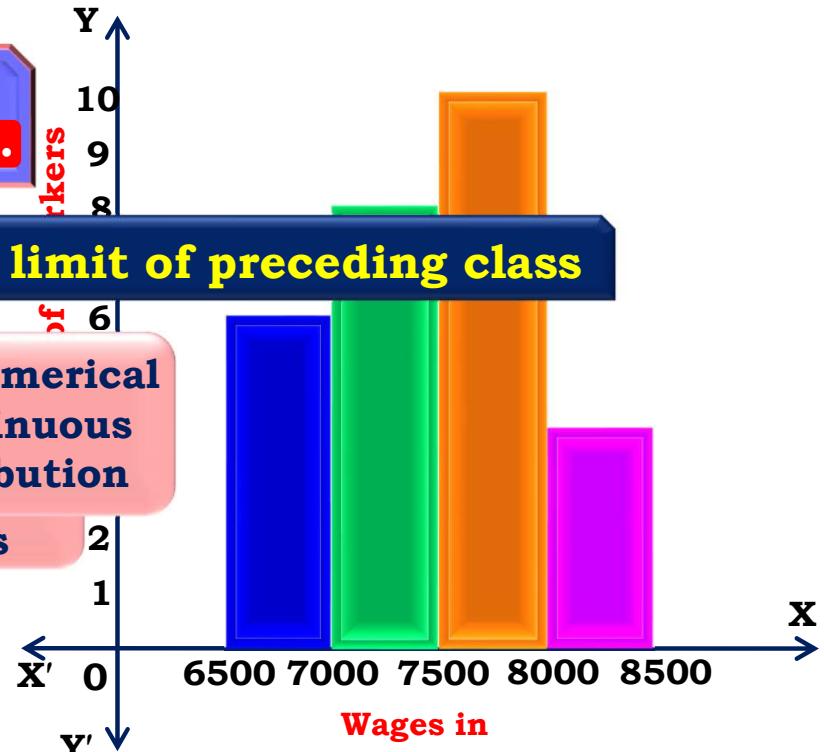
i.e. upper limit = lower limit of preceding class

Wages (in `)	No. of workers
6500 - 7000	6
7000 - 7500	8
7500 - 8000	10
8000 - 8500	4

It means
between

Let us have an numerical example of continuous frequency distribution

limit of proceeding class



To draw a histogram :

→ **Class should be continuous**

CLASSES

Discontinuous Classes

Not same

1 - 10

11 - 20

21 - 30

Continuous Classes

Same

0 - 10

10 - 20

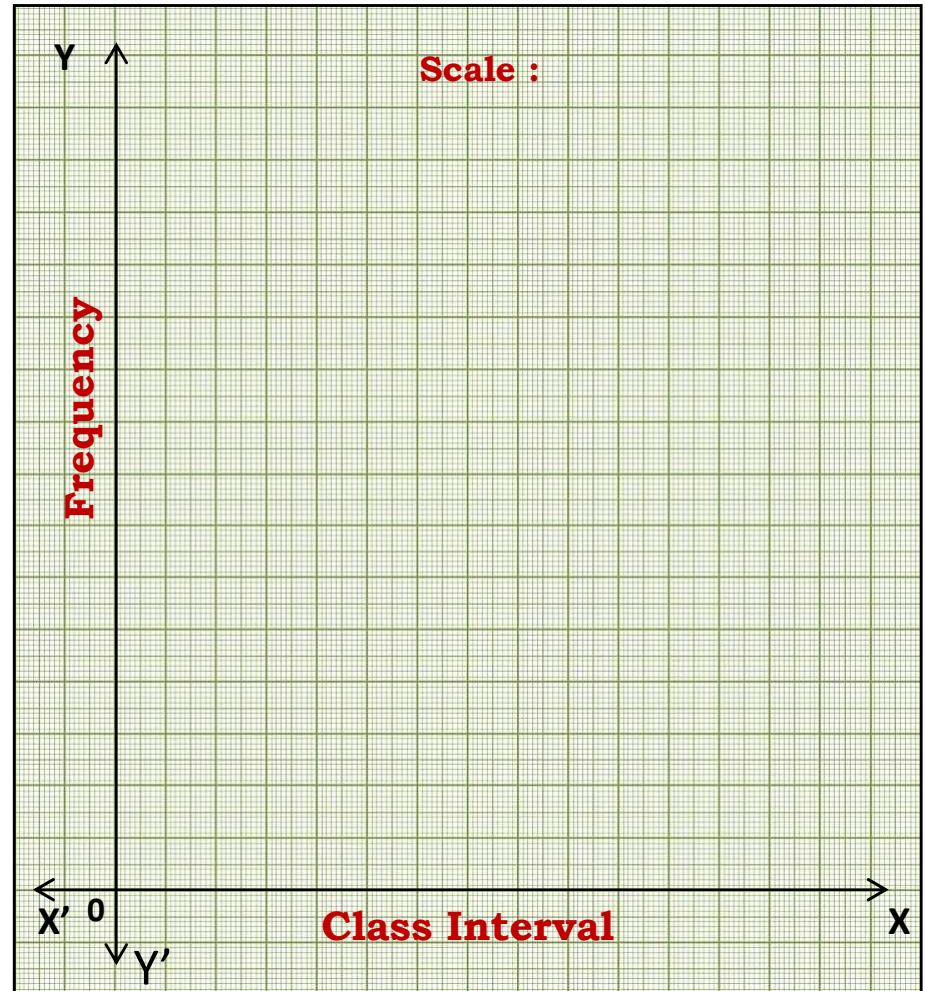
20 - 30

To draw histogram :

- Class should be continuous
- Draw X axis and Y axis
- Scale
- Frequency on Y axis

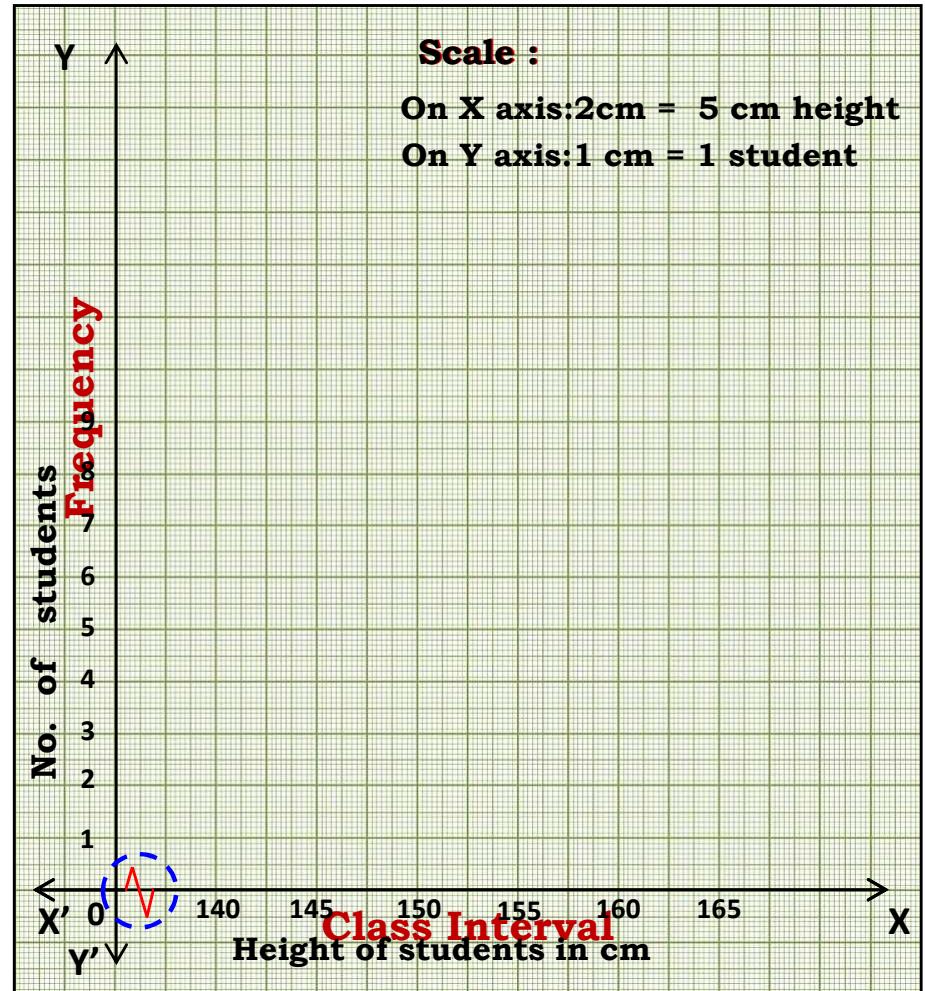
Maximum frequency	Ideal Scale for Y axis
Up to 20	1 cm = 1 unit
Up to 40	1 cm = 2 units

- Class Interval on X axis



To draw histogram :

This mark is called as 'Krink' mark



Q. For which of these would you use a histogram to show the data:

- (a) The number of letters for different areas in a postman's bag.
- (b) The height of competitors in an athletics meet.
- (c) The number cassettes produced by 5 companies.
- (d) The number of passengers boarding trains from 7.00 a.m. to 7.00 p.m. at a station.

Give reason for each.

In case (a) and (C)

The given data cannot
be divided into class interval

Sol:

Case (b):

Area

No. Of letters

A₁ Data (height of competitors) can be divided into 15 class intervals on X axis.

A₂ Hence we can represent the data using Histogram.

Case (d):

A₃ Data (Boarding timings - 7 am to 7 pm) can be divided into class intervals.

A₄ Hence we can represent the data using Histogram.

A₅ Histogram

Company

No. of cassettes

of Train
competitors
timings,

200 160 - 8170
400

700 170 - 9180

500 180 - 1090

150 190 - 290

**Number of
competitors**

155

100

88

200



Histogram is a graphical representation of data, if data represented in manner of class-interval.

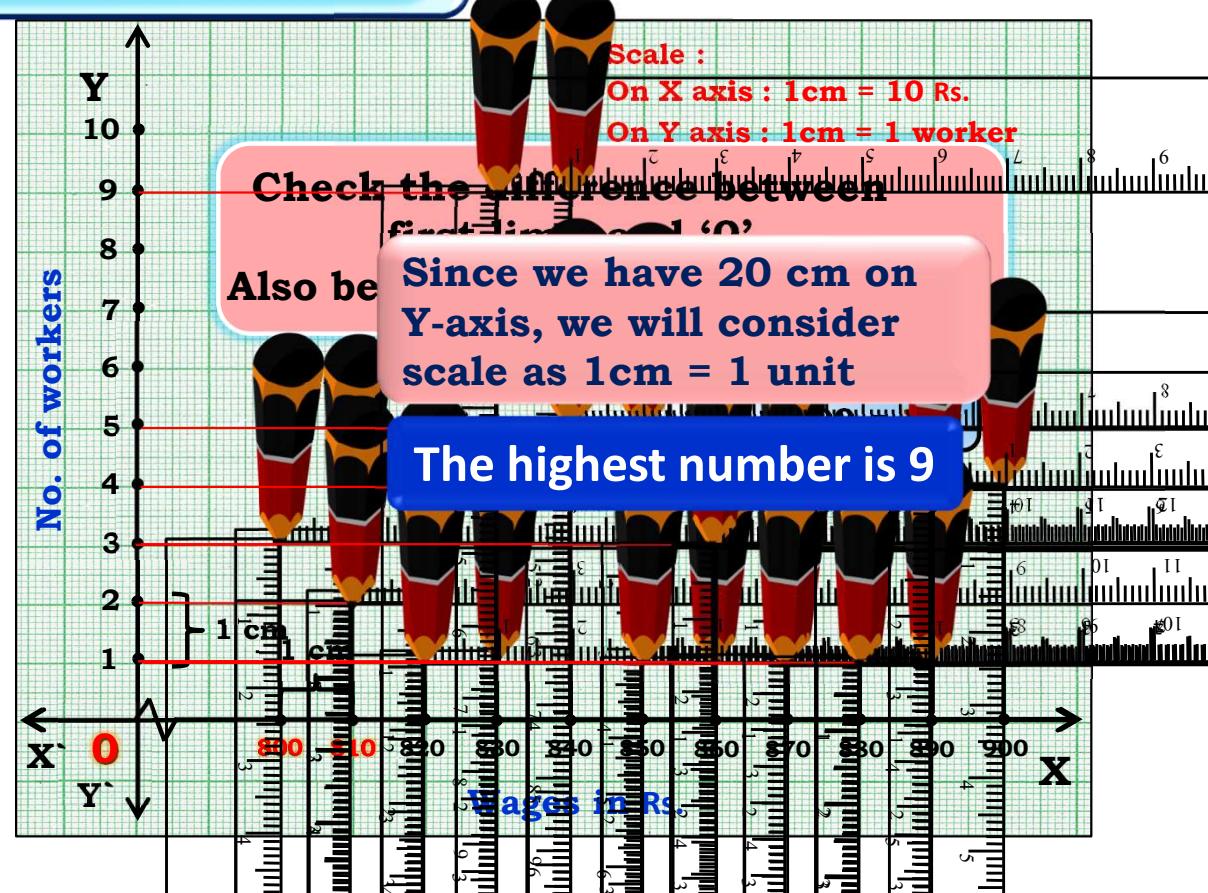
Module 7

Q. Draw a histogram for the frequency distribution given below and answer the following questions

(i) Which group has the maximum frequency?
(ii) How many workers earn Rs 100 or more?
(iii) How many workers earn less than Rs 70?

Since difference is not same we will put krink mark on X-axis

Wages in Rs.	No. of workers
800 - 810	3
810 - 820	2
820 - 830	1
830 - 840	9
840 - 850	5
850 - 860	1
860 - 870	3
870 - 880	1
880 - 890	1
890 - 900	4
Total	30



Module 8

Q. Draw a histogram for the frequency table given below and answer the following questions.

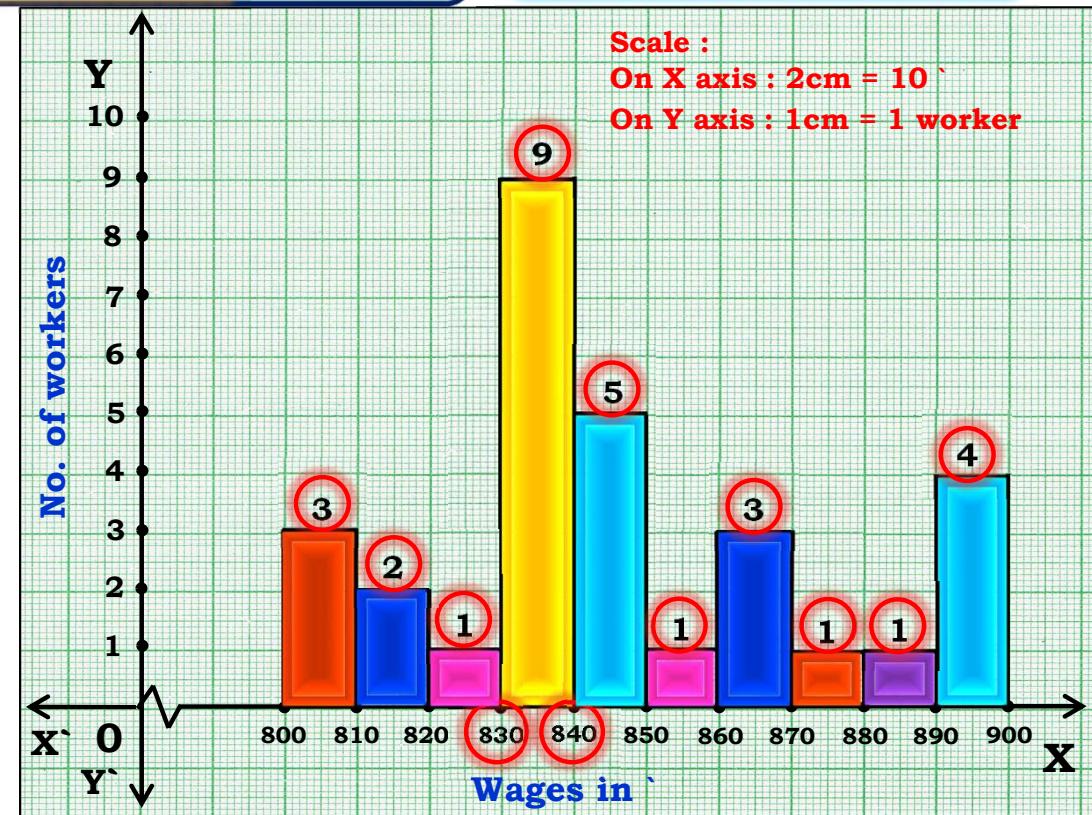
- (i) Which group has the maximum number of workers?
- (ii) How many workers earn Rs. 850 and more?
- (iii) How many workers earn less than Rs. 850?

$$1 + 3 + 1 + 1 + 4 = 10$$

Sol:

- (i) 830 – 840 group has the maximum number of workers.
- (ii) 10 workers can earn more than Rs. 850.
- (iii) 20 workers earn less than Rs.850.

$$5 + 9 + 1 + 2 + 3 = 20$$

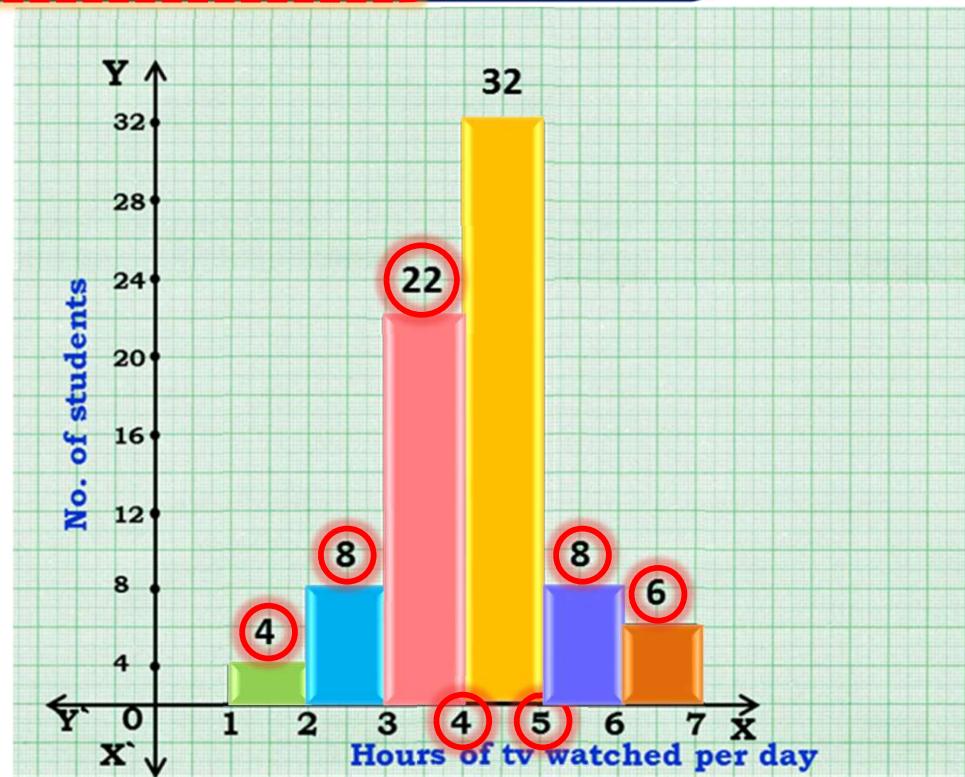


Q. The number of hours for which students of a particular class watched television during holidays is shown through the given graph. Answer the following:

- (i) For how many hours did the maximum number of students watch T.V.?
- (ii) How many students watched TV for less than 4 hours?
- (iii) How many students spent more than 5 hours in watching TV?

Sol:

- (i) The maximum number of students watched T.V. for 4 – 5 hours.
- (ii) 34 students watched T.V. for less than 4 hours. $4 + 8 + 22 = 34$
- (iii) 14 students spent more than 5 hours in watching T.V. $8 + 6 = 14$

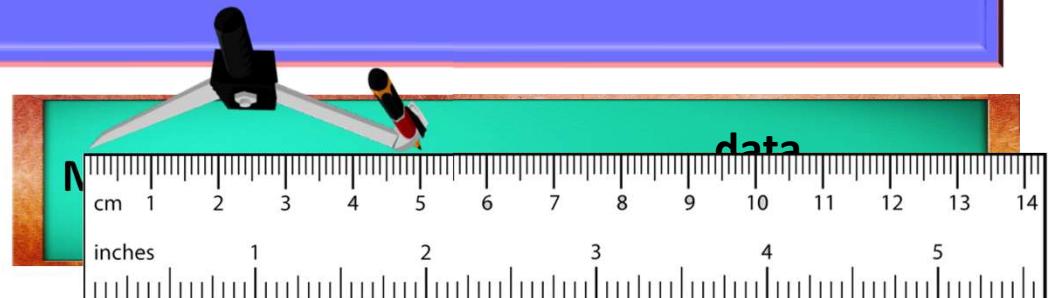
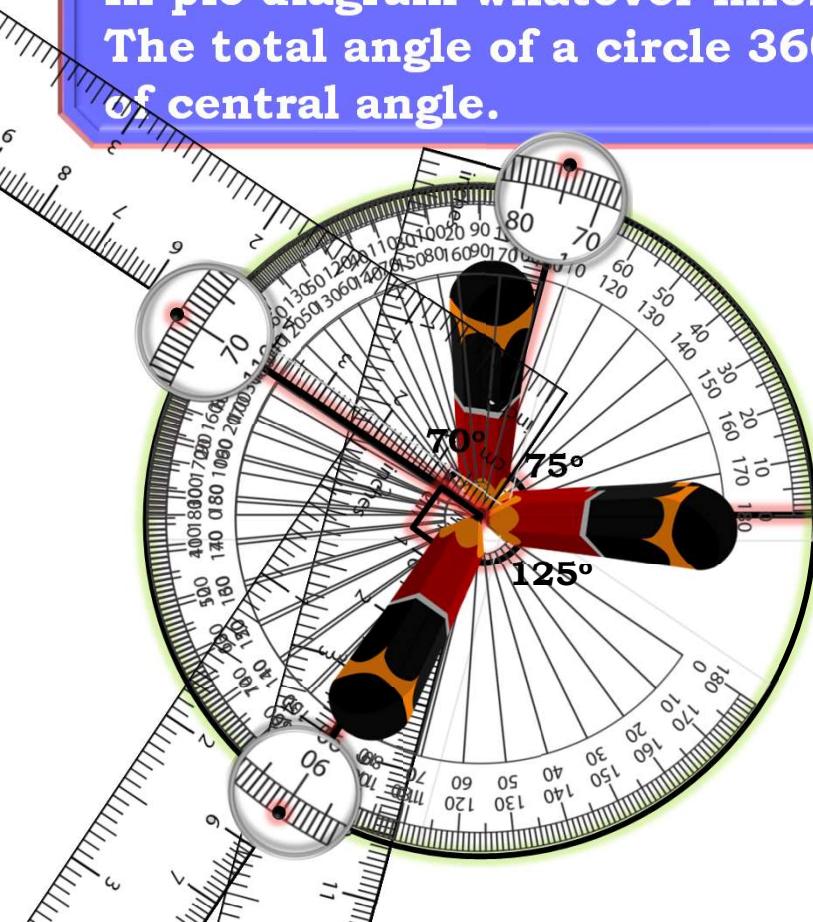


Lecture 2

Module 9

PIE DIAGRAM

In pie diagram whatever information is given is put in a circle.
The total angle of a circle 360° is broken into sectors based on measure of central angle.



Q. 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.

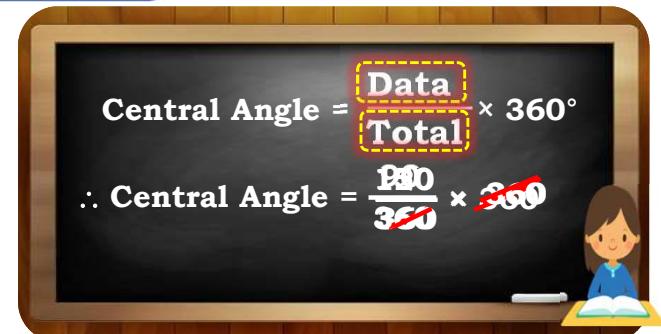
(iii) Draw a pie chart to show this information.

Seasons	Summer	Rainy	Winter	Total
No. of votes	90	120	150	360

Sol: (i) Winter season got the most votes

(ii)

Seasons	No. of votes	Central Angles
Summer	90	90°
Rainy	120	120°
Winter	150	130°
Total	360	360°



Q. 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.

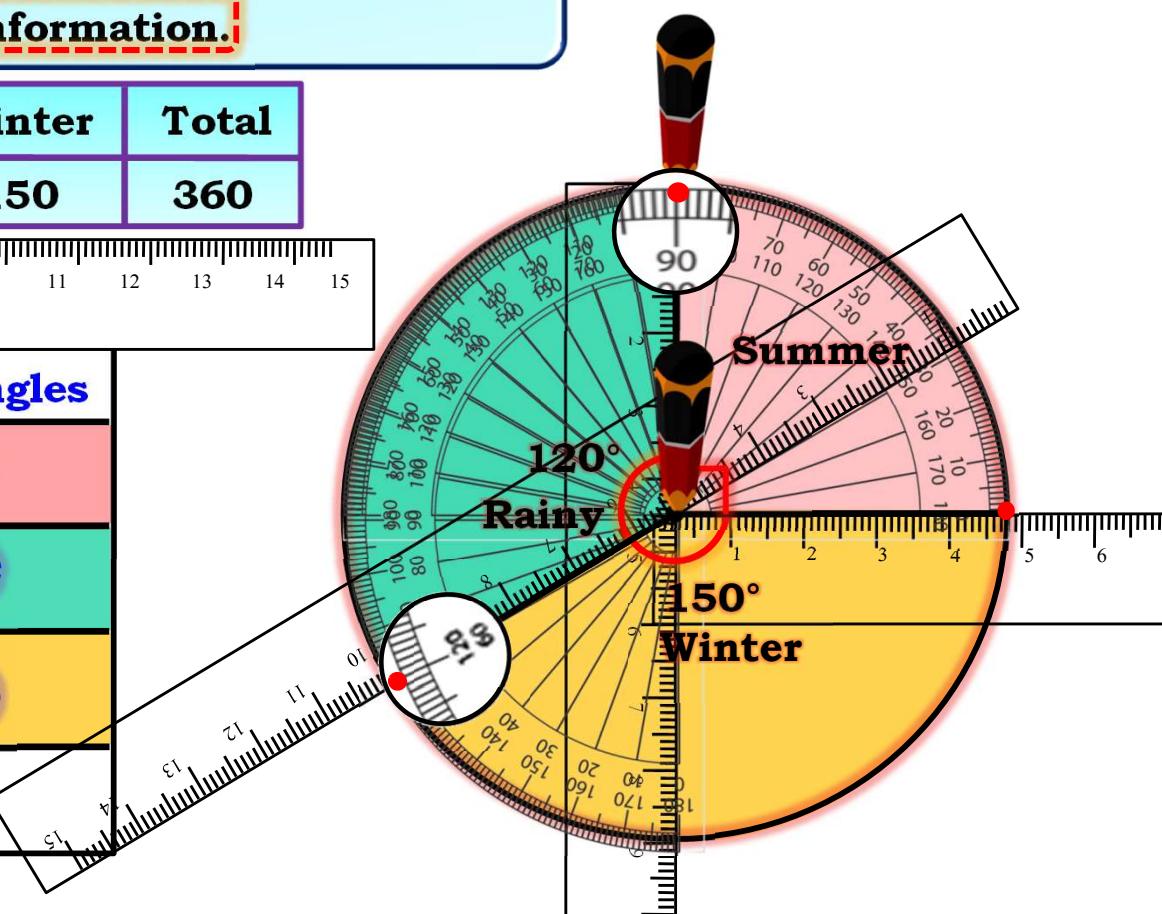
(iii) Draw a pie chart to show this information.

Seasons	Summer	Rainy	Winter	Total
No. of votes	90	120	150	360

Sol:

(ii)

Seasons	No. of votes	Central Angles
Summer	90	90°
Rainy	120	120°
Winter	150	150°
Total	360	360°



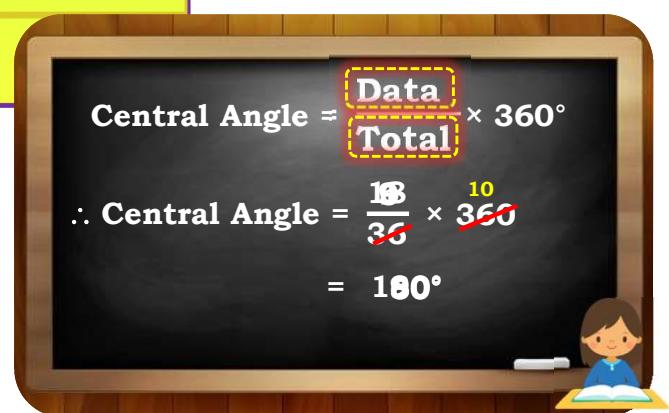
Module 10

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

Colours	Blue	Green	Red	Yellow	Total
Number of people	18	9	6	3	
Colours	No. of People	Central Angles			
Blue	18	180°			
Green	9	90°			
Red	6	60°			
Yellow	3	30°			
Total	36	360°			

Sol:

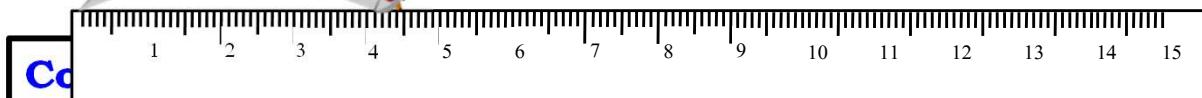
Colours	No. of People	Central Angles
Blue	18	180°
Green	9	90°
Red	6	60°
Yellow	3	30°
Total	36	360°



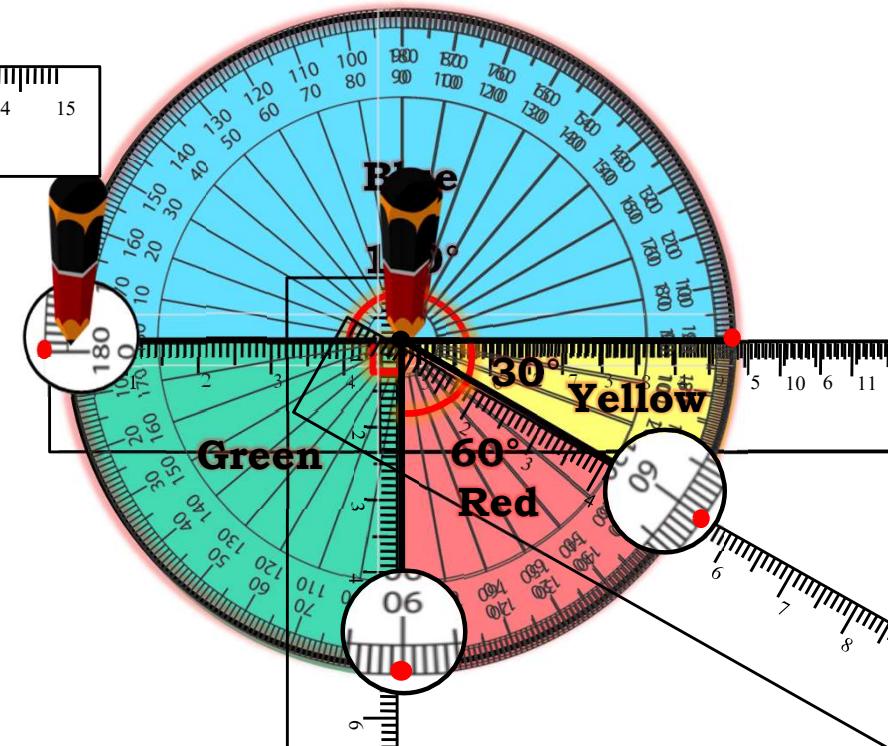
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The table shows the colours preferred by a group of people.

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

Sol:



Blue	18	180°
Green	9	90°
Red	6	60°
Yellow	3	30°
Total	36	360°



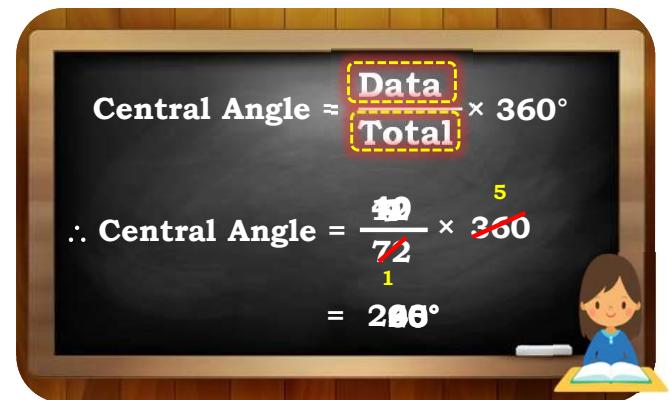
Module 11

Q. 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
No. Of Students	40	12	9	7	4	72

Sol:

Language	No. of Students	Central angle
Hindi	40	200°
English	12	60°
Marathi	9	45°
Tamil	7	35°
Bengali	4	20°
Total	72	360°

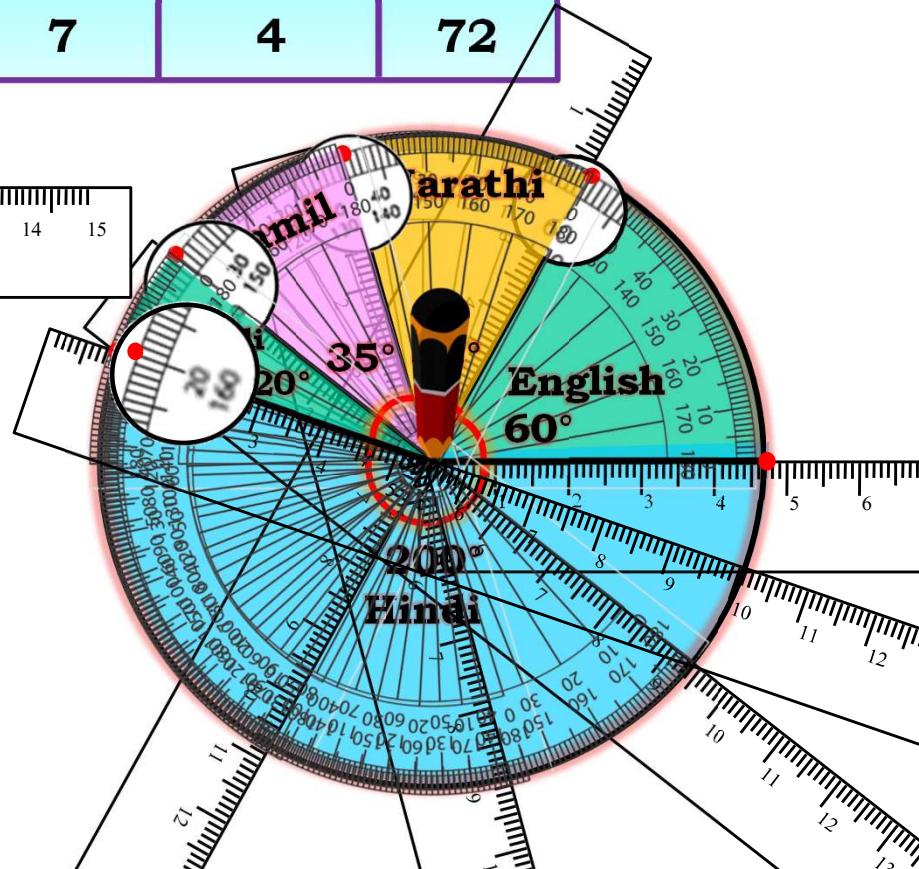


Q. The number of students in a hostel, speaking different languages is given below. Display the data in a pie chart.

Language	Hindi	English	Marathi	Tamil	Bengali	Total
No. Of Students	40	12	9	7	4	72

Sol:

Language	No. of students	Central angle
English	12	60°
Marathi	9	45°
Tamil	7	35°
Bengali	4	20°
Total	72	360°

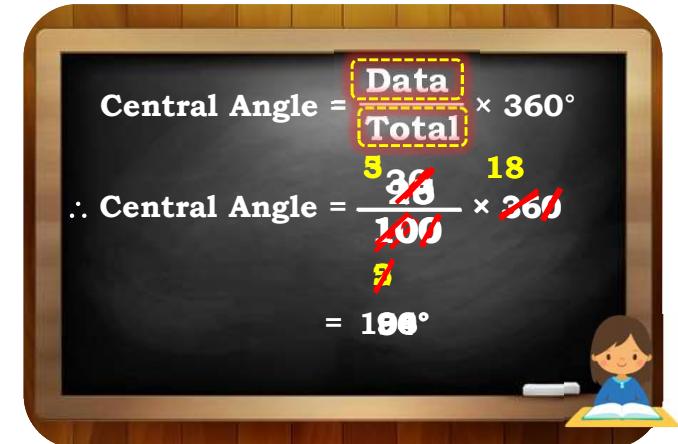


Module 12

Q.The following data relates to the cost of construction of a house in Delhi.
Draw a pie – diagram to represent the above.

Items	Cement	Steel	Bricks	Timber	Labour	Miscellaneous
Expenditure	30%	10%	10%	15%	25%	10%

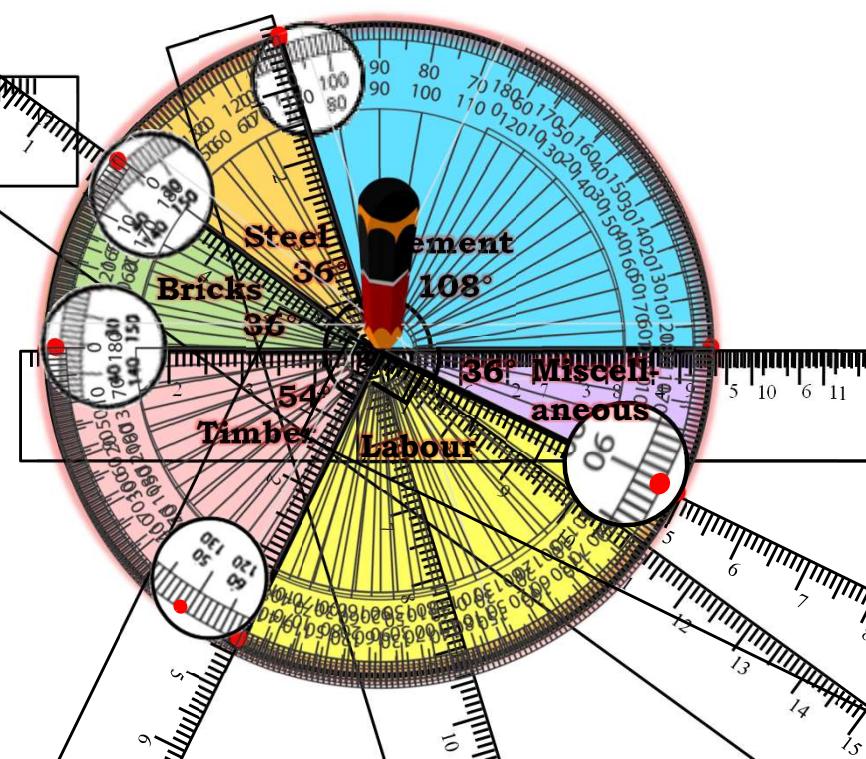
Items	Expenditure	Central angle
Cement	30%	108°
Steel	10%	36°
Bricks	10%	36°
Timber	15%	54°
Labour	25%	90°
Miscellaneous	10%	36°
Total	100%	360°



Q.The following data relates to the cost of construction of a house in Delhi.
Draw a pie – diagram to represent the above.

Items	Cement	Steel	Bricks	Timber	Labour	Miscellaneous
Expenditure	30%	10%	10%	15%	25%	10%

Items	Expenditure	Central angle
Cement	30%	108°
Steel	10%	36°
Bricks	10%	36°
Timber	15%	54°
Labour	25%	90°
Miscellaneous	10%	36°
Total	100%	360°

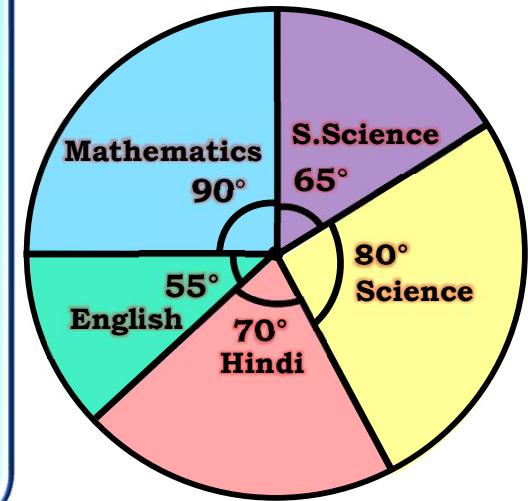


Module 13

Q. 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 a student was 540, answer The following questions:

- (i) In which subject did the student score 105 marks?
- (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.



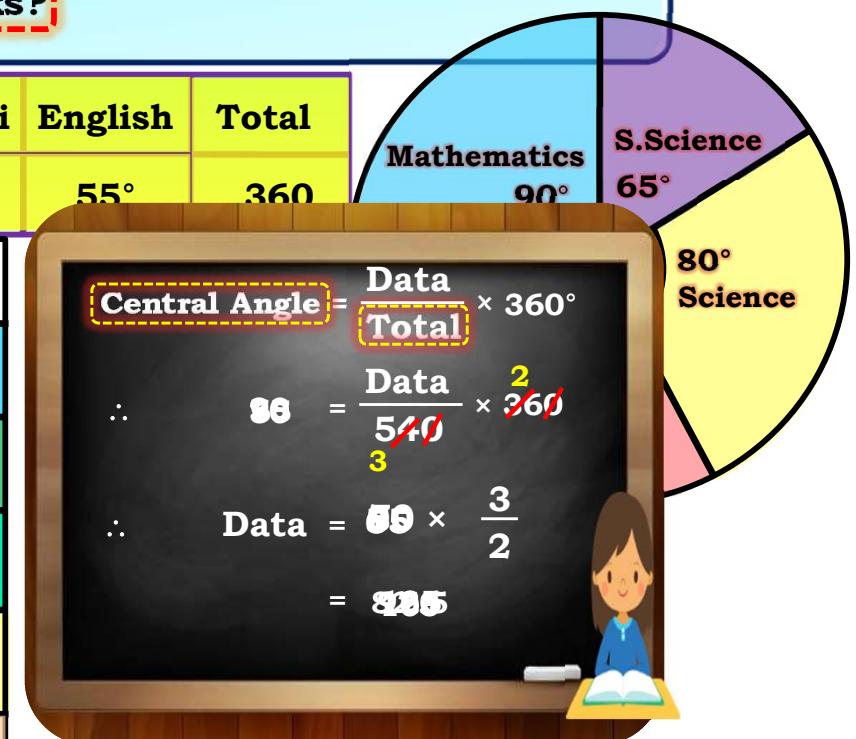
Q. The adjoining pie chart gives the marks scored in an examination by a student in Hindi, English, Mathematics, Social Science and Science.

If the total marks obtained by a student was 540, then answer the foll. questions:

(i) In which subject did the student score 105 marks?

Subjects	Mathematics	Social Science	Science	Hindi	English	Total
Central angles	90°	65°	80°	70°	55°	360

Subjects	Central angle	Marks Obtained
Mathematics	90°	135
Social Science	65°	92.5
Science	80°	120
Hindi	70°	105
English	55°	82.5
Total	360°	540



Q. 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 a student was 540, answer The following questions:

(i) In which subject did the student score 105 marks?

Sol.

(i) The student scored 105 marks in Hindi.

Subjects	Central angle	Marks Obtained
Mathematics	90°	135
Social Science	65°	97.5
Science	80°	120
Hindi	70°	105
English	55°	82.5
Total	360°	540

Q. 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 a student was 540, answer The following questions:

(ii) How many more marks were obtained by the student in Mathematics than in Hindi?

Sol.

(ii) Marks obtained in Mathematics = 135

Marks obtained in Hindi = 105

$$\begin{aligned}\text{Difference} &= 135 - 105 \\ &= 30\end{aligned}$$

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

Subjects	Central angle	Marks Obtained
Mathematics	90°	135
Social Science	65°	97.5
Science	80°	120
Hindi	70°	105
English	55°	82.5
Total	360°	540

Q. 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 a student was 540, answer The following questions:

(iii) Examine whether the sum of the marks obtained in Social Science and Mathematics is more than that in Science and Hindi.

Sol.

$$\begin{aligned}\text{(iii) The sum of marks in Social Science and Mathematics} &= 135 + 97.5 \\ &= 232.5\end{aligned}$$

$$\begin{aligned}\text{The sum of marks in Science and Hindi} &= 120 + 105 \\ &= 225\end{aligned}$$

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

Subjects	Central angle	Marks Obtained
Mathematics	90°	135
Social Science	65°	97.5
Science	80°	120
Hindi	70°	105
English	55°	82.5
Total	360°	540

Module 14

Q. 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) 10% represents 20 people.

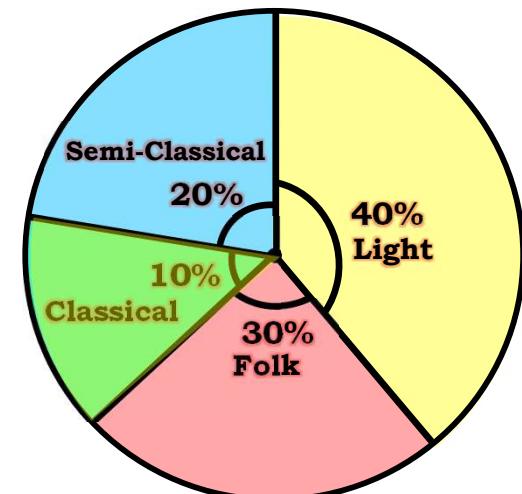
Let Total Number of people surveyed be ' x '

\therefore 10% of x is 20

$$\therefore \frac{10}{100} \times x = 20$$

$$\therefore x = \frac{20 \times 100}{10}$$

$$\therefore x = 200$$



Hence, 200 people were surveyed.

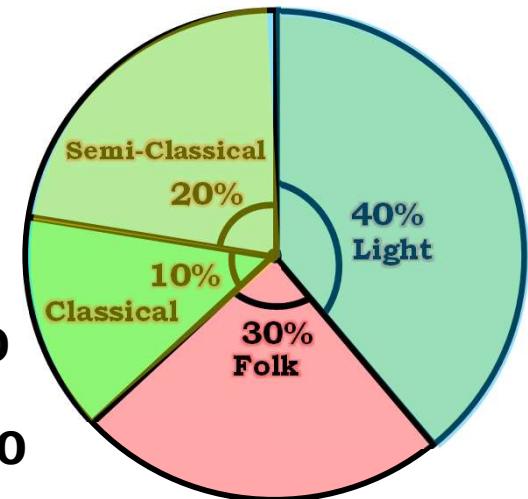
Q. A survey was made to find the type of music that a certain group of young people liked in a city. Adjoining pie chart shows the findings of this survey. From this pie chart, answer the following:

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

$$\begin{aligned}\text{(iii) CD's of classical music} &= 10\% \text{ of } 1000 \\ &= \frac{10}{100} \times 1000 = 100\end{aligned}$$

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



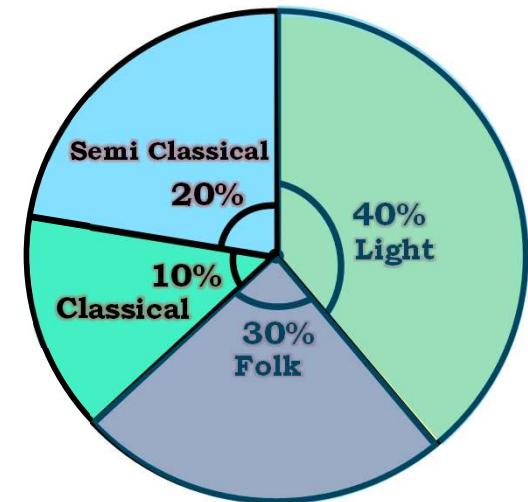
- Q.** A survey was made to find the type of music that a certain group of young people liked in a city. Adjoining pie chart shows the findings of this survey. From this pie chart, answer the following:
- (i) If 20 people liked classical music, how many young people were surveyed?
 - (ii) Which type 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: CD's of light music = 40% of 1000

$$= \frac{40}{100} \times 1000 = 400$$

CD's of folk music = 30% of 1000

$$= \frac{30}{100} \times 1000 = 300$$



Lecture 3

Module 15

Random Experiment :It is an experiment in which all the possible results are known in advance but they cannot be predicted with certainty.

For eg : Rolling of a Die

1,2,3,4,5,6 → **Possible Results**



The result of a random experiment. →

Outcome

Number of all possible outcomes = 6

**Here, we assume that each outcome
is likely to occur equally as other.**

A Coin is Tossed



H



T

All possible outcomes are H, T
Number of all possible outcomes = 2



2 Coins are Tossed Together



Result on second coin



Result on second coin



Result on first coin

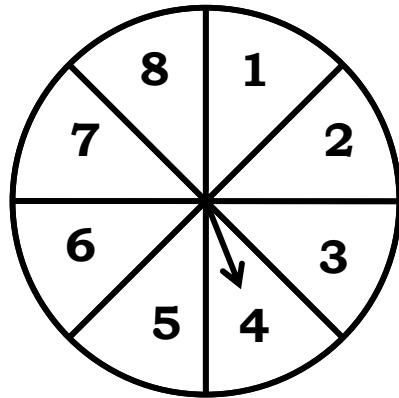


Result on second coin

HH, HT, TH, TT

Number of all possible outcomes = 4

Game Of Chance :



All possible outcomes are 1, 2, 3, 4, 5, 6, 7, 8

Number of all possible outcomes = 8

On whichever number the arrow points that number is taken as an outcome of that experiment.

Module 16

Event - Set of Favourable outcomes.

Something that you wish should happen / should not happen.

For example:

Let us assume a situation we are watching an India v/s Australia match. And 1 ball is remaining and 5 runs are required to win.

All possible Outcomes are – Win, Lose, Draw

Events are denoted by Capital Letters

Let A be the event that INDIA wins

A = Win

Let B be the event that INDIA does not lose

B = Win, Draw

PROBABILITY OF AN EVENT

$$P(E) = \frac{\text{Number of outcomes favourable to } E}{\text{Number of all possible outcomes of the experiment}}$$

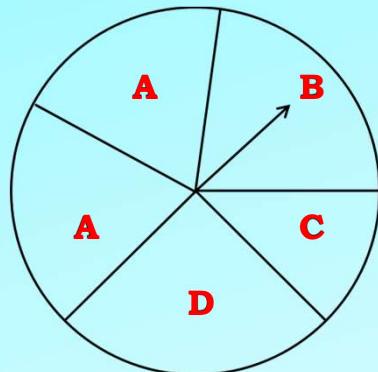
An event is denoted by capital letter.

Module 17

Q. List the outcomes you can see in these experiments.

(a) Spinning a wheel

(b) Tossing two coins together



Sol:

(a) When a wheel is spun.

The possible outcomes are A, A, B, C, D.

(b) When two coins are tossed together.

The possible outcomes are HH, HT, TH, TT.

Q. 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

Sol: When a die is thrown,

All the possible outcomes are 1, 2, 3, 4, 5, 6

(i)

(a) Let A be the event of getting a prime number.

Outcomes favourable to A are 2, 3, 5.

(b) Let B be the event of getting not a prime number.

Outcomes favourable to B are 1, 4, 6.

(ii)

(a) Let C be the event of getting a number greater than 5.

Outcome favourable to C is 6.

(b) Let D be the event of getting a number not greater than 5.

Outcomes favourable to D are 1, 2, 3, 4, 5.

Q. Find the Probability of the pointer stopping on D.

Sol: When a wheel is spun.

The possible outcomes are A, A, B, C, D.

Total number of outcomes = 5

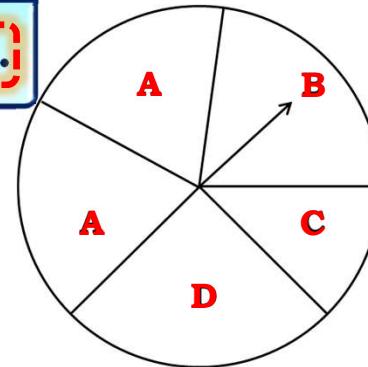
Let A be the event of pointer stopping on D.

∴ Number of outcome = 1

$$\therefore P(A) = \frac{\text{Number of outcomes favourable to A}}{\text{Total number of possible outcomes}}$$

$$\therefore P(A) = \frac{1}{5}$$

∴ The probability of pointer stopping at D is $\frac{1}{5}$



Module 18

Q. Find the Probability of getting an ace from a well shuffled deck of 52 playing cards.

Sol: The total number possible outcomes = 52

Let A be the event of getting an ace card.

There are 4 aces in a deck of 52 playing cards.

∴ Number of outcome = 4

$$\therefore P(A) = \frac{\text{Number of outcomes favourable to } A}{\text{Total number of possible outcomes}}$$

$$\therefore P(A) = \frac{4}{52}$$

$$\therefore P(A) = \frac{1}{13}$$

∴ The probability of getting ace card is $\frac{1}{13}$

Q. Find the Probability of getting a red apple.

Sol: Total number of apples = 7

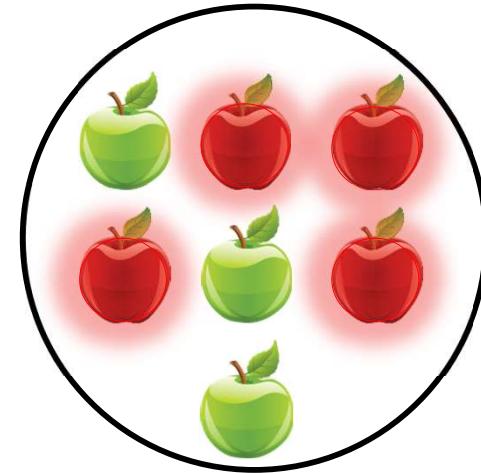
Let A be the event of getting a red apple.

Total number of red apples = 4

$$\therefore P(A) = \frac{\text{Number of outcomes favourable to } A}{\text{Total number of possible outcomes}}$$

$$\therefore P(A) = \frac{4}{7}$$

∴ The probability of getting a red apple is $\frac{4}{7}$



Module 19

Q 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.

Sol: When slip is chosen from the box,
All the possible outcomes are 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
Total no. of possible outcomes = 10

Let A be the event of getting a number 6.

Outcome favourable to A is 6

∴ **No. of outcomes favourable to A = 1**

$$\therefore P(A) = \frac{\text{Number of outcomes favourable to A}}{\text{Total number of possible outcomes}}$$

$$\therefore P(A) = \frac{1}{10}$$

Q. 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:
(ii) getting a number less than 6.

Sol: When slip is chosen from the box,

All the possible outcomes are 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

Total no. of possible outcomes = 10

Let B be the event of getting a number less than 6.

Outcomes favourable to B are 1, 2, 3, 4, 5.

∴ No. of outcomes favourable to B = 5

$$\therefore P(B) = \frac{\text{Number of outcomes favourable to B}}{\text{Total number of possible outcomes}}$$

$$\therefore P(B) = \frac{5}{10}$$

$$\therefore P(B) = \frac{1}{2}$$

Q. 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:
(iii) getting a number greater than 6.

Sol: When slip is chosen from the box,

All the possible outcomes are 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,

Total no. of possible outcomes = 10

(ii) Let C be the event of getting a number greater than 6.
Outcomes favourable to C are 7, 8, 9, 10.

∴ No. of outcomes favourable to C = 4

$$\therefore P(C) = \frac{\text{Number of outcomes favourable to } C}{\text{Total number of possible outcomes}}$$

$$\therefore P(C) = \frac{4}{10}$$

$$\therefore P(C) = \frac{2}{5}$$

Q. 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:
(iv) getting a 1-digit number.

Sol: When slip is chosen from the box,

All the possible outcomes are 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

Total no. of possible outcomes = 10

(ii) Let D be the event of getting a 1-digit number.

Outcomes favourable to D are 1, 2, 3, 4, 5, 6, 7, 8, 9.

∴ No. of outcomes favourable to D = 9

$$\therefore P(D) = \frac{\text{Number of outcomes favourable to } D}{\text{Total number of possible outcomes}}$$

$$\therefore P(D) = \frac{9}{10}$$

Module 20

Q. If you have a spinning wheel with 3 green sectors, 1 blue sector and 1 red sector, what is the probability of getting :

- (i) a green sector
- (ii) a none-blue sector

Sol: There are five sectors,

∴ Possible outcomes is 5.

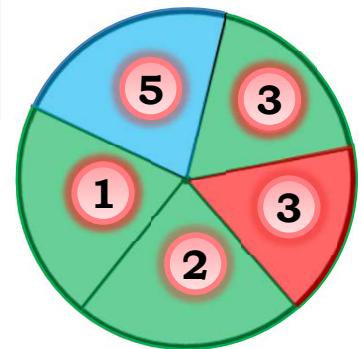
(i) Let A be the event of getting green sector.

Number of outcomes favourable to A is 3.

$$\therefore P(A) = \frac{\text{Number of outcomes favourable to A}}{\text{Total number of possible outcomes}}$$

$$\therefore P(A) = \frac{3}{5}$$

∴ The probability of getting green sector is $\frac{3}{5}$



Q. If you have a spinning wheel with 3 green sectors, 1 blue sector and 1 red sector, what is the probability of getting :

- (i) a green sector
- (ii) a non-blue sector

Sol: There are five sectors,

∴ Possible outcomes is 5.

(ii) Let B be the event of getting non – blue sector.

There is one blue sector out of five sectors.

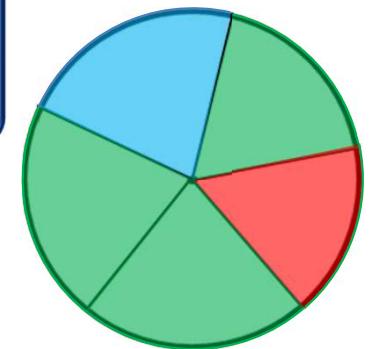
$$\text{Non - blue sector} = 5 - 1 = 4$$

Number of outcomes favourable to B is 4.

$$\therefore P(B) = \frac{\text{Number of outcomes favourable to B}}{\text{Total number of possible outcomes}}$$

$$\therefore P(B) = \frac{4}{5}$$

∴ The probability of getting non – blue is $\frac{4}{5}$



Module 21

Q. When a die is thrown, find the probability 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

Sol: When a die is thrown,

All the possible outcomes are 1, 2, 3, 4, 5, 6

Total no. of possible outcomes = 6

(i) (a) Let A be the event of getting a prime number.

Outcomes favourable to A are 2, 3, 5

∴ No. of outcomes favourable to A = 3

$$\therefore P(A) = \frac{\text{Number of outcomes favourable to A}}{\text{Total number of possible outcomes}}$$

$$\therefore P(A) = \frac{3}{6}$$

$$\therefore P(A) = \frac{1}{2}$$

Q. When a die is thrown, find the probability 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

Sol: When a die is thrown,

All the possible outcomes are 1, 2, 3, 4, 5, 6

Total no. of possible outcomes = 6

(i) (b) Let B be the event of getting not a prime number.

Outcomes favourable to B are 1, 4, 6.

∴ No. of outcomes favourable to B = 3

$$\therefore P(B) = \frac{\text{Number of outcomes favourable to B}}{\text{Total number of possible outcomes}}$$

$$\therefore P(B) = \frac{3}{6}$$

$$\therefore P(B) = \frac{1}{2}$$

Q. When a die is thrown, find the probability 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

Sol: When a die is thrown,

All the possible outcomes are 1, 2, 3, 4, 5, 6

Total no. of possible outcomes = 6

(ii) (a) Let C be the event of getting a number greater than 5.

Outcome favourable to C is 6.

∴ No. of outcomes favourable to C = 1

$$\therefore P(C) = \frac{\text{Number of outcomes favourable to } C}{\text{Total number of possible outcomes}}$$

$$\therefore P(C) = \frac{1}{6}$$

Q. When a die is thrown, find the probability 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

Sol: When a die is thrown,

All the possible outcomes are 1, 2, 3, 4, 5, 6

Total no. of possible outcomes = 6

(ii) (b) Let D be the event of not getting a number greater than 5.

Outcomes favourable to D are 1, 2, 3, 4, 5.

∴ No. of outcomes favourable to D = 5

$$\therefore P(D) = \frac{\text{Number of outcomes favourable to } D}{\text{Total number of possible outcomes}}$$

$$\therefore P(D) = \frac{5}{6}$$