RD Sharma Solutions for Class 8 Math Chapter 25 - Data Handling Iii (pictorial Representation Of Data As Pie Charts Or Circle Graphs)

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Question 1:

The number of hours, spent by a school boy on different activities in a working day, is given below:

Activities	Sleep	School	Home	Play	Others	Total
Number of hours	8	7	4	2	3	24

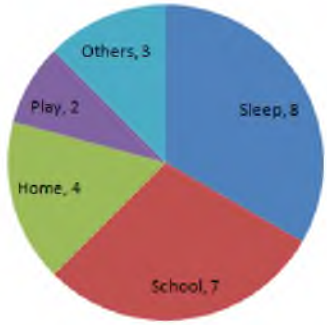
Present the information in the form of a pie-chart.

ANSWER:

We know:
Central angle of a component = (component value / sum of component values × 360)
Here, total number of hours = 24
Thus, the central angle for each component can be calculated as follows:

Activity	Number of hours	Sector angle
Sleep	8	$8/24 \times 360 = 120^o$
School	7	$7/24 \times 360 = 105^o$
Home	4	$4/24 \times 360 = 60^o$
Play	2	$2/24 \times 360 = 30^o$
Others	3	$3/24 \times 360 = 45^o$

Now, the pie chat that represents the given data can be constructed by following the steps given below:
Step 1 : Draw a circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here, the largest central angle is 120^o. Draw a sector with the central angle 120^o in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter-clockwise direction.
Step 4 : Construct other sectors representing other items in the clockwise direction in descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them as shown as in the figure below.



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Question 2:

Employees of a company have been categorized according to their religions as given below:

Religions	Hindu	Muslim	Sikh	Christian	Total
Number of workers	420	300	225	105	1080

Draw a pie-chart to represent the above information.

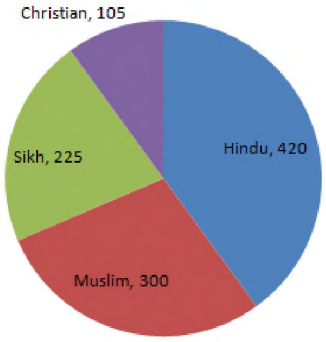
ANSWER:

We know:
Central angle of a component = (component value / sum of component values × 360^o)
Here, total number of workers = 1050
Thus, the central angle for each component can be calculated as follows:

Religion	Number of workers	Sector angle
Hindu	420	420/1050 × 360 = 144
Muslim	300	300/1050 × 360 = 102.9
Sikh	225	225/1050 × 360 = 77.14
Christian	105	105/1050 × 360 = 36

Note: The total number of workers is 1050, not 1080.

Now, the pie chat that represents the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here, the largest central angle is 144^o. Draw a sector with the central angle 144^o in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct other sectors representing other items in the clockwise direction in the descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them as shown as in the figure below.



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Question 3:

In one day the sales (in rupees) of different items of a baker's shop are given below:

Items	Ordinary bread	Fruit bread	Cakes and Pastries	Biscuits	Others	Total
Sales (in Rs)	260	40	100	60	20	480

Draw a pie-chart representing the above sales.

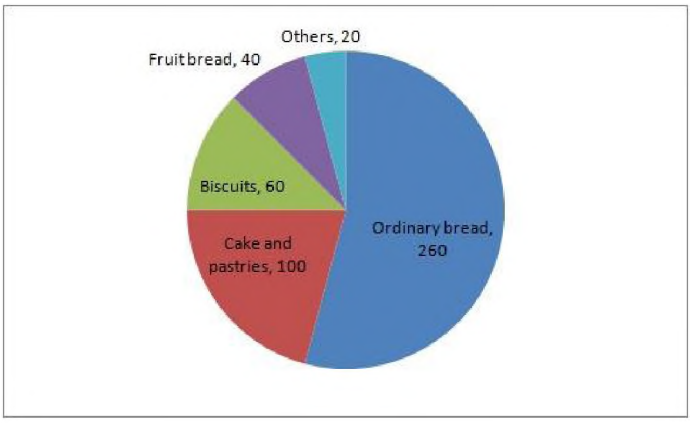
ANSWER:

We know:
Central angle of a component = (component value/sum of component values × 360)
Here, total sales = Rs 480
Thus, the central angle for each component can be calculated as follows:

Item	Sale (in Rs)	Sector angle
Ordinary bread	260	260/480 × 360 = 195
Fruit bread	40	40/480 × 360 = 30
Cakes and pastries	100	100/480 × 360 = 75
Biscuits	60	60/480 × 360 = 45

Others	20	20/480 × 360 = 15

Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here, the largest central angle is 195°. Draw a sector with the central angle 195° in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct other sectors representing other items in the clockwise direction in the descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them, as shown as in the figure below.



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Question 4:

The following data shows the expenditure of a person on different items during a month. Represent the data by a pie-chart.

Items of expenditure	Rent	Education	Food	Clothing	Others
Amount (in Rs)	2700	1800	2400	1500	2400

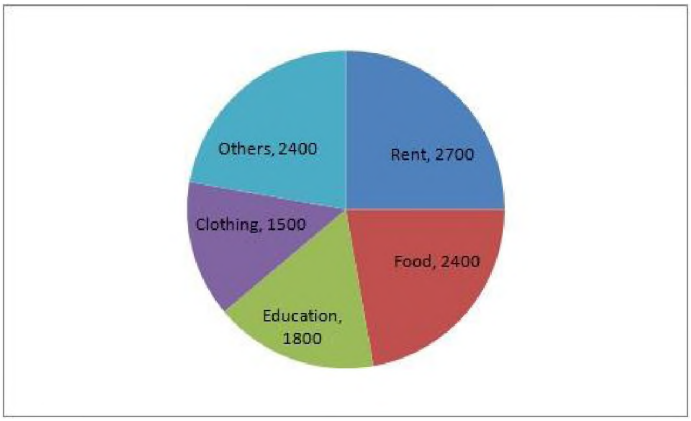
ANSWER:

We know:
Central angle of a component = (component value/sum of component values × 360)
Here, total amount = Rs 10800
Thus, the central angle for each component can be calculated as follows:

Item	Amount (in Rs)	Sector angle
Rent	2700	2700/10800 × 360 = 90
Education	1800	1800/10800 × 360 = 60
Food	2400	2400/10800 × 360 = 80
Clothing	1500	1500/10800 × 360 = 50
Others	2400	2400/10800 × 360 = 80

Total : 10800 (in Rs)

Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here, the largest central angle is 90°. Draw a sector with the central angle 90° in such a way that one radius coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct other sectors representing other items in the clockwise direction in descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them, as shown as in the figure below.



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Question 5:

The percentages of various categories of workers in a state are given in the following table.

Categoies	Culti-vators	Agricultural Labourers	Industrial Workers	Commercial Workers	Others
% of workers	40	25	12.5	10	12.5

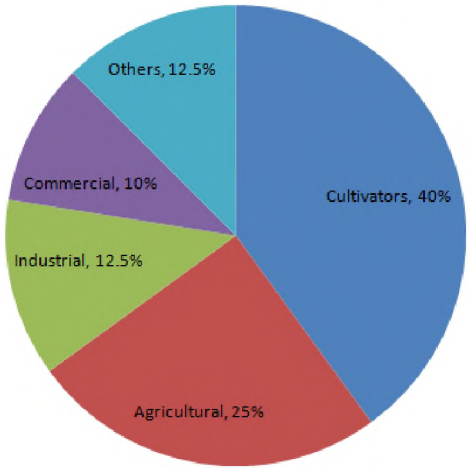
Present the information in the form a pie-chart.

ANSWER:

We know:
Central angle of a component = (component value/sum of component values × 360)
Here, total percentage of workers = 100
Thus, the central angle for each component can be calculated as follows:

Category	Percentage of workers	Sector angle
Cultivators	40	40/100 × 360 = 144
Agricultural labourers	25	25/100 × 360 = 90
Industrial workers	12.5	12.5/100 × 360 = 45
Commercial workers	10	10/100 × 360 = 36
Others	12.5	12.5/100 × 360 = 45

Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here, the largest central angle is 144^o. Draw a sector with the central angle 144^o in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct other sectors representing other items in the clockwise direction in descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them, as shown as in figure below.



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Question 6:

The following table shows the expenditure incurred by a publisher in publishing a book:

Items	Paper	Printing	Binding	Advertising	Miscellaneous
Expenditure (in%)	35%	20%	10%	5%	30%

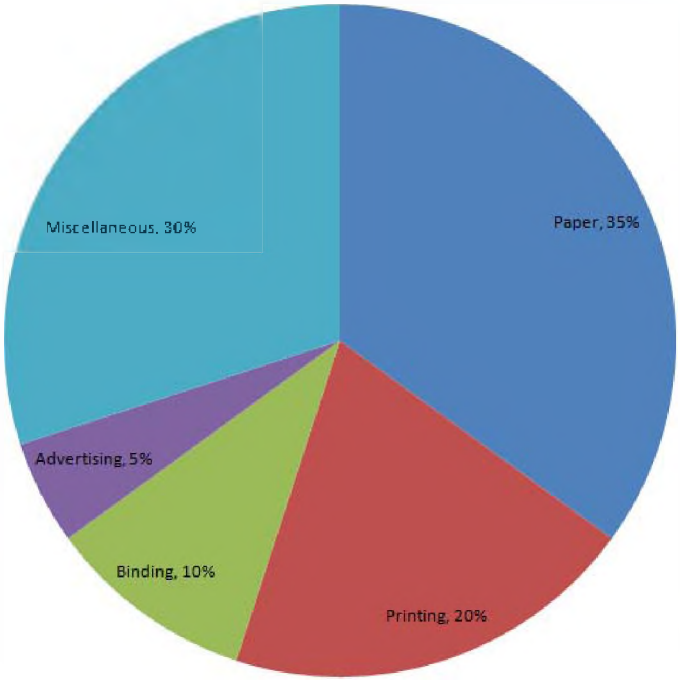
Present the above data in the form of a pie-chart.

ANSWER:

We know:
Central angle of a component = (component value/sum of component values × 360)
Here the total % of expenditures = 100%
Thus the central angle for each component can be calculated as follows:

Item	Expenditure (in %)	Sector angle
Paper	35	35/100 × 360 = 126
Printing	20	20/100 × 360 = 72
Binding	10	10/100 × 360 = 36
Advertising	5	5/100 × 360 = 18
Miscellaneous	30	30/100 × 360 = 108

Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here, the largest central angle is 126°. Draw a sector with the central angle 126° in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct other sectors representing other items in the clockwise direction in descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them, as shown as in figure below.



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Question 7:

Percentage of the different products of a village in a particular district are given below. Draw a pie-chart representing this information.

Items	Wheat	Pulses	Jwar	Grounnuts	Vegetables	Total
%	$\frac{125}{3}$	$\frac{125}{6}$	$\frac{25}{2}$	$\frac{50}{3}$	$\frac{25}{3}$	100

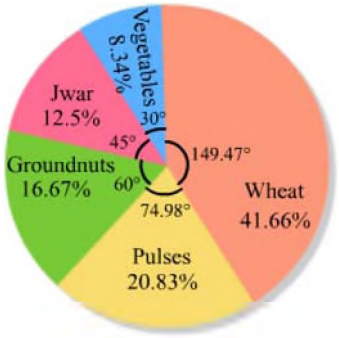
ANSWER:

We know:
Central angle of a component = (component value/sum of component values × 360°)

Here, the total % of items = 100
Thus, the central angle for each component can be calculated as follows:

Item		In %	Sector angle
Wheat	125/3	41.66	41.66/100 × 360 = 149.97
Pulses	125/6	20.83	20.83/100 × 360 = 74.98
Jwar	25/2	12.5	12.5/100 × 360 = 45
Groundnuts	50/3	16.66	16.66/100 × 360 = 59.97
Vegetables	25/3	8.33	8.33/100 × 360 = 29.98

Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here the largest central angle is 149.97°. Draw a sector with the central angle 149.97° in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct other sectors representing other items in the clockwise sense in descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them, as shown as in the figure below.



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Question 8:

Draw a pie-diagram for the following data of expenditure pattern in a family:

Items	Food	Clothing	Rent	Education	Unforeseen events	Midicine
Expenditure (in percent)	40%	20%	10%	10%	15%	5%

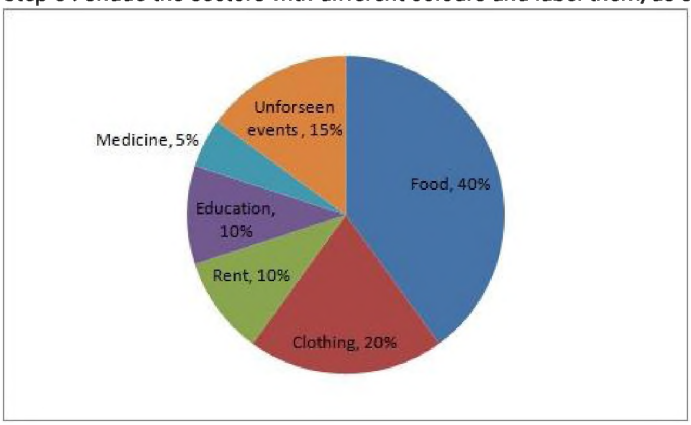
ANSWER:

We know:
Central angle of a component = (component value/sum of component values × 360°)
Here, the total % of items = 100
Thus, central angle for each component can be calculated as follows:

Item	Expenditure	Sector angle
Food	40%	40/100 × 360 = 144
Clothing	20%	20/100 × 360 = 72
Rent	10%	10/100 × 360 = 36
Education	10%	10/100 × 360 = 36
Unforeseen events	15%	15/100 × 360 = 54
Medicine	5%	5/100 × 360 = 18

Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here the largest central angle is 144°. Draw a sector with the central angle 144° in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct other sectors representing other items in the clockwise sense in descending order of magnitudes of their central angles.

Step 5 : Shade the sectors with different colours and label them, as shown as in figure below.



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Question 9:

Draw a pie-diagram of the areas of continents of the world given in the following table:

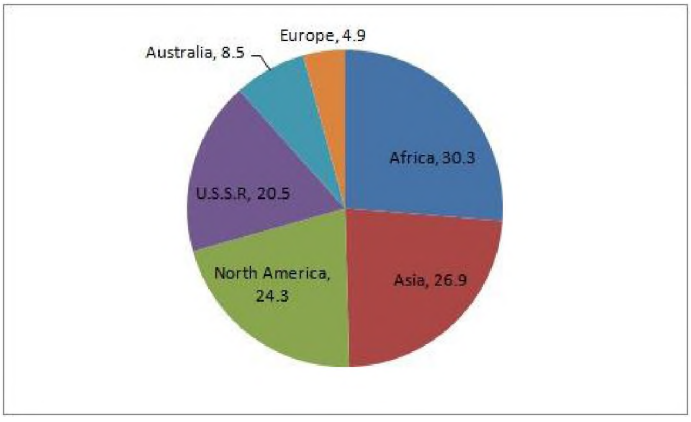
Continents	Asia	U.S.S.R	Africa	Europe	Noth America	South America	Australia
Area (in million sq. km)	26.9	20.5	30.3	4.9	24.3	17.9	8.5

ANSWER:

We know:
Central angle of a component = (component value/sum of component values × 360)
Here, total area in million sq km = 133.3
Thus, the central angle for each component can be calculated as follows:

Continent	Area (in million sq. km)	Sector angle
Asia	26.9	26.9/133.3 × 360 = 72.6
U.S.S.R	20.5	20.5/133.3 × 360 = 55.4
Africa	30.3	30.3/133.3 × 360 = 81.8
Europe	4.9	4.9/133.3 × 360 = 13.2
North America	24.3	24.3/133.3 × 360 = 65.6
South America	17.9	17.9/133.3 × 360 = 48.3
Australia	8.5	8.5/133.3 × 360 = 23

Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here the largest central angle is 81.8°. Draw a sector with the central angle 81.8° in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct other sectors representing other items in the clockwise sense in descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them, as shown as in figure below.



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Question 10:

The following data gives the amount spent on the construction of a house. Draw a pie diagram.

Items	Cement	Timber	Bricks	Labour	Steel	Miscellaneous
Expenditure (in thousand Rs)	60	30	45	75	45	45

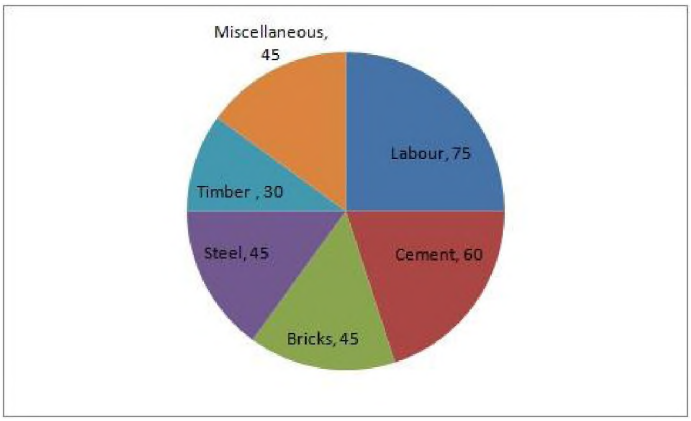
ANSWER:

We know:
Central angle of a component = (component value/sum of component values × 360)
Here. the total expenditures = 300 (in thousand Rs)
Thus the central angle for each component can be calculated as follows:

Item	Expenditure (in thousand Rs)	Sector angle
Cement	60	60/300 × 360 = 72
Timber	30	30/300 × 360 = 36
Bricks	45	45/300 × 360 = 54
Labour	75	75/300 × 360 = 90
Steel	45	45/300 × 360 = 54
Miscellaneous	45	45/300 × 360 = 54

Total expenditure: 300 (in thousand Rs)

Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here the largest central angle is 90°. Draw a sector with the central angle 90° in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct other sectors representing the other items in the clockwise direction in descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them, as shown as in figure below.



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Question 11:

The following table shows how a student spends his pocket money during the course of a month. Represent it by a pie-diagram.

Items	Food	Entertainment	Other expenditure	Savings
Expenditure	40%	25%	20%	15%

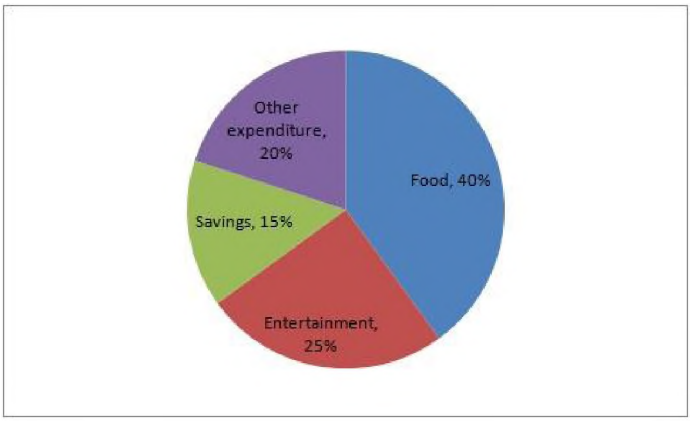
ANSWER:

We know:
Central angle of a component = (component value/sum of component values × 360)
Here, total expenditure = 100%
Thus, central angle for each component can be calculated as follows:

Item	**Expenditure (in %)**	**Sector angles**

Food	40	40/100 × 360 = 144
Entertainment	25	25/100 × 360 = 90
Other expenditures	20	20/100 × 360 = 72
Savings	15	15/100 × 360 = 54

Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here the largest central angle is 144°. Draw a sector with the central angle 144° in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct other sectors representing the other items in the clockwise sense in descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them, as shown as in figure below.



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Question 12:

Represent the following data by a pie-diagram:

Items of expenditure	*Expenditure*	
	Family A	*Family B*
Food	4000	6400
Clothing	2500	480
Rent	1500	3200
Education	400	1000
Miscellaneous	1600	600
Total	10000	16000

ANSWER:

We know:
Central angle of a component = (component value/sum of component values × 360)
Here the total expenditure of family A = 10000 and family B = 11680

Thus the central angle for each component can be calculated as follows:

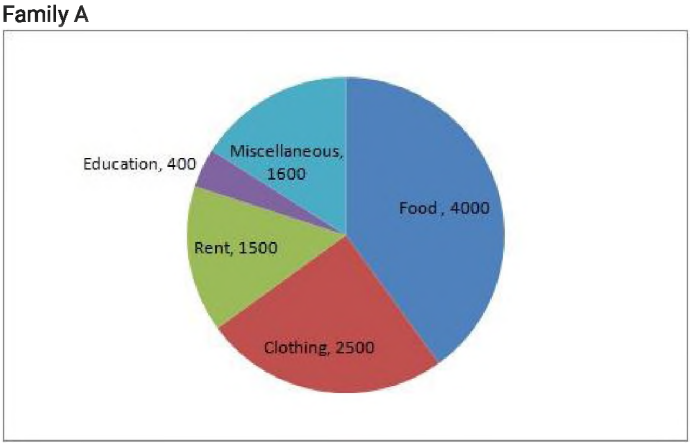
Item	Expenditure (Family A)	Sector angle (Family A)	Expenditure (Family B)	Sector angle (Family B)
Food	4000	4000/10000 × 360 = 144	6400	6400/11680 × 360 = 197.3
Clothing	2500	2500/10000 × 360 = 90	480	480/11680 × 360 = 14.8
Rent	1500	1500/10000 × 360 = 54	3200	3200/11680 × 360 = 98.6
Education	400	400/10000 × 360 = 14.4	1000	1000/11680 × 360 = 30.8
Miscellaneous	1600	1600/10000 × 360 = 57.6	600	600/11680 × 360 = 18.5

Total expenditure of family A: 10000
Total expenditure of family B: 11680 (not 16000)

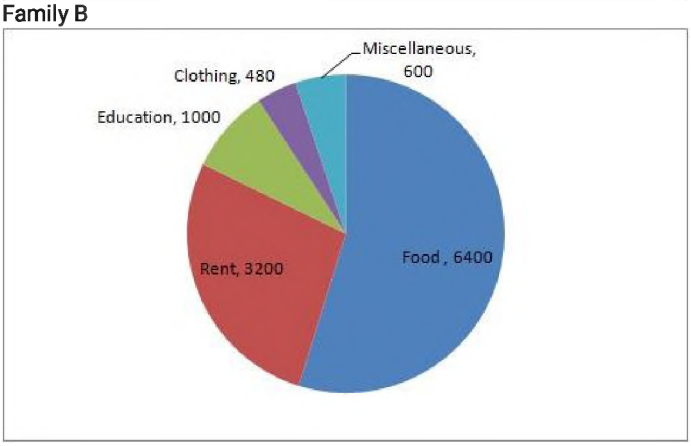
Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here the largest central angle is 144°. Draw a sector with the central angle 144° in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct other sectors representing the other items in the clockwise sense in descending order of magnitudes of their central angles.

Step 5 : Shade the sectors with different colours and label them, as shown as in figure below.

Family A



Family B



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Question 13:

Following data gives the break up of the cost of production of a book:

Printing	Paper	Binding charges	Advertisement	Royalty	Miscellaneous
30%	15%	15%	20%	10%	15%

Draw a pie- diagram depicting the above information.

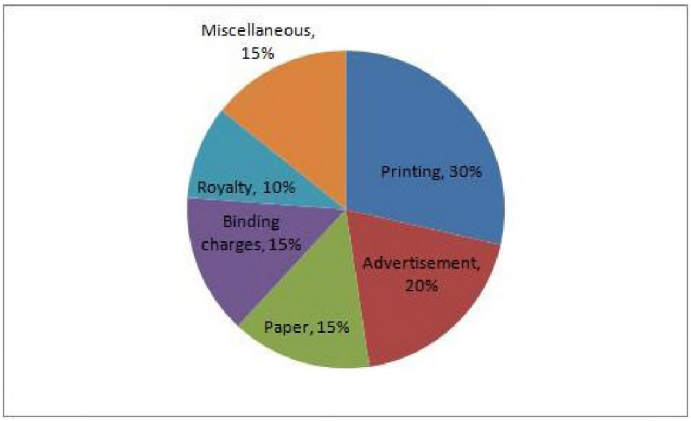
ANSWER:

We know:
Central angle of a component = (component value/sum of component values × 360)
Here, total expenditures = 105%
Thus, the central angle for each component can be calculated as follows:

Item	Expenditure (in %)	Sector angle
Printing	30	30/105 × 360 = 102.9
Paper	15	15/105 × 360 = 51.4
Binding charges	15	15/105 × 360 = 51.4
Advertisement	20	20/105 × 360 = 68.6
Royalty	10	10/105 × 360 = 34.3
Miscellaneous	15	15/105 × 360 = 51.4

Total : 105%

Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here the largest central angle is 102.9^{o}. Draw a sector with the central angle 102.9^{o} in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct other sectors representing the other items in the clockwise sense in descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them, as shown as in figure below.



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Question 14:

Represent the following data with the help of a pie-diagram:

Items	Wheat	Rice	Tea
Production (in metric tons)	3260	1840	900

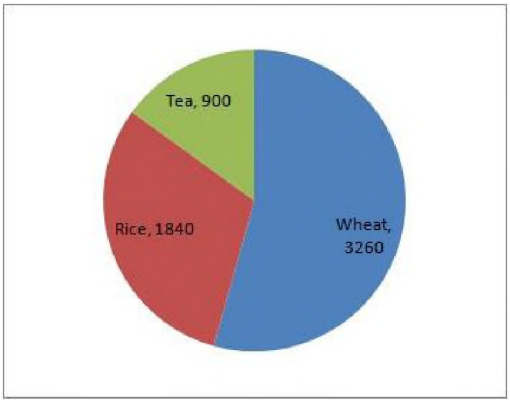
ANSWER:

We know:
Central angle of a component = (component value/sum of component values x 360)
Here, total production = 6000 (in metric tons)
Thus, the central angle for each component can be calculated as follows:

Item	Production (in metric tons)	Sector angle
Wheat	3260	3260/6000 x 360 = 195.6
Rice	1840	1840/6000 x 360 =1 10.4
Tea	900	900/6000 x 360 = 54

Total = 6000 (in metric tons)

Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here, the largest central angle is 195.6°. Draw a sector with the central angle 195.6 ° in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct the other sectors representing the other items in the clockwise direction in descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them as shown in the figure below.



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Question 15:

Draw a pie-diagram representing the relative frequencies (expressed as percentage) of the eight classes as given below:
12.6, 18.2, 17.5, 20.3, 2.8, 4.2, 9.8, 14.7

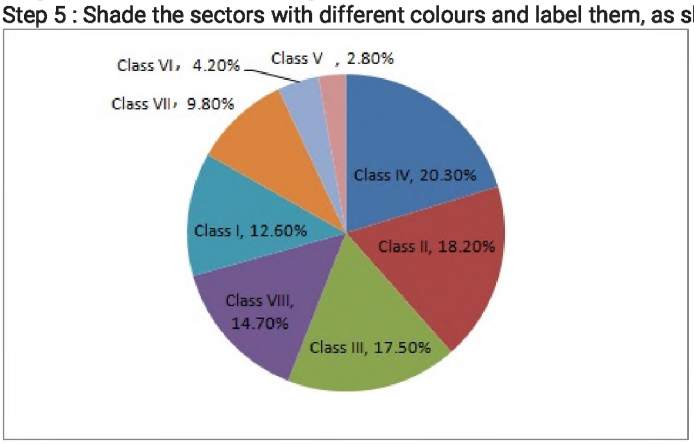
ANSWER:

We know:
Central angle of a component = (component value/sum of component values × 360)
Here, total amount = 100.1%
Thus, central angle for each component can be calculated as follows:

Item	Amount (in %)	Sector angle
Class I	12.6	12.6/100.1 × 360 = 45.3
Class II	18.2	18.2/100.1 × 360 = 65.5
Class III	17.5	17.5/100.1 × 360 = 62.9
Class IV	20.3	20.3/100.1 × 360 = 73
Class V	2.8	2.8/100.1 × 360 = 10.1
Class VI	4.2	4.2/100.1 × 360 = 15.1
Class VII	9.8	9.8/100.1 × 360 = 35.2
Class VIII	14.7	14.7/100.1 × 360 = 52.9

Total = 100.1%

Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1
Step 3 : Choose the largest central angle. Here the largest central angle is 73°. Draw a sector with the central angle 73° in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct other sectors representing the other items in the clockwise sense in descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them, as shown as in the figure below.



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Question 16:

Following is the break up of the expenditure of a family on different items of consumption:

Items	Food	Clothing	Rent	Education	Fuel etc.	Medicine	Miscellaneous
Expenditure (in Rs)	1600	200	600	150	100	80	270

Draw a pie-diagram to represent the above data.

ANSWER:

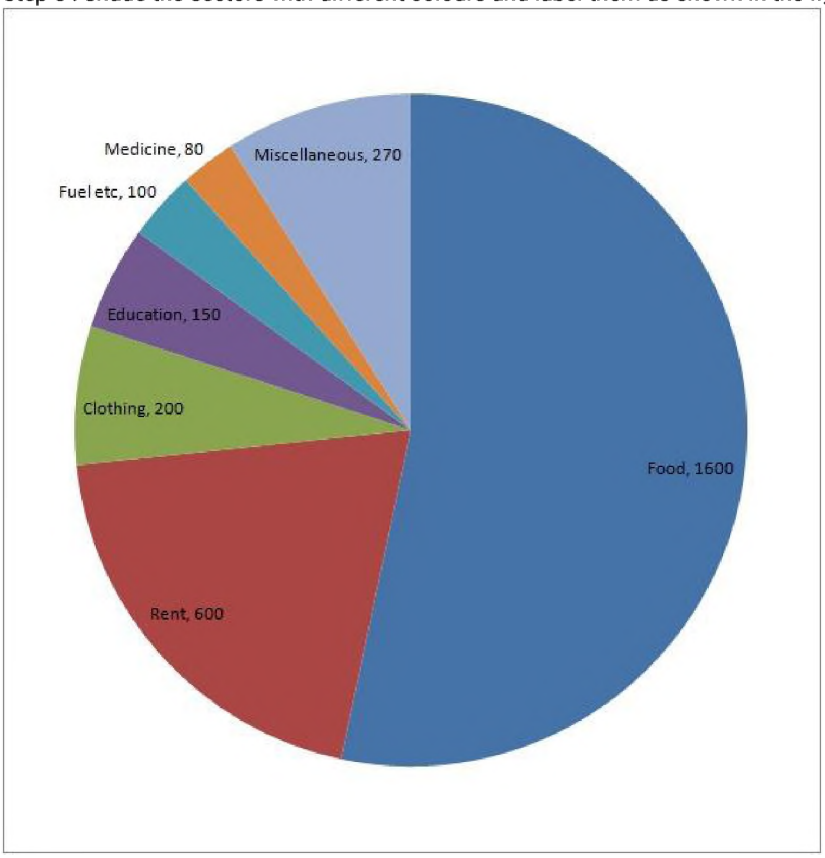
We know:
Central angle of a component = (component value/sum of component values × 360)
Here, total expenditure = Rs 3000
Thus, central angle for each component can be calculated as follows:

Item	Expenditure (in Rs)	Sector angle
Food	1600	1600/3000 × 360 = 192
Clothing	200	200/3000 × 360 = 24
Rent	600	600/3000 × 360 = 72
Education	150	150/3000 × 360 = 18
Fuel etc	100	100/3000 × 360 = 12
Medicine	80	80/3000 × 360 = 9.6

Miscellaneous	270	270/3000 × 360 = 32.4

Total : 3000 (in Rs)

Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw a circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.
Step 3 : Choose the largest central angle. Here, the largest central angle is 192°. Draw a sector with the central angle 192° in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct other sectors representing the other items in the clockwise sense in descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them as shown in the figure below.



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Question 17:

Draw a pie-diagram for the following data of the investment pattern in a five year plan:

Agriculture	Irrigation and Power	Small Industries	Transport	Social service	Miscellaneous
14%	16%	29%	17%	16%	8%

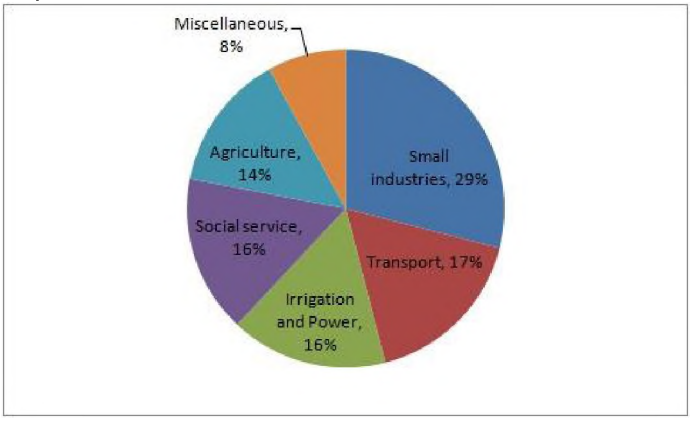
ANSWER:

We know:
Central angle of a component = (component value/sum of component values x 360)
Here the total percentage = 100%
Thus, the central angle for each component can be calculated as follows:

Item	Amount (in %)	Sector angle
Agriculture	14	14/100 x 360 = 50.4
Irrigation and Power	16	16/100 x 360 = 57.6
Small Industries	29	29/100 x 360 = 104.4
Transport	17	17/100 x 360 = 61.2
Social Service	16	16/100 x 360 = 57.6
Miscellaneous	8	8/100 x 360 = 28.8

Now, the pie chat representing the given data can be constructed by following the steps below:
Step 1 : Draw circle of an appropriate radius.
Step 2 : Draw a vertical radius of the circle drawn in step 1.

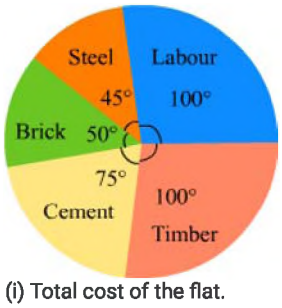
Step 3 : Choose the largest central angle. Here the largest central angle is 104.4°. Draw a sector with the central angle 104.4° in such a way that one of its radii coincides with the radius drawn in step 2 and another radius is in its counter clockwise direction.
Step 4 : Construct the other sectors representing the other items in the clockwise sense in descending order of magnitudes of their central angles.
Step 5 : Shade the sectors with different colours and label them as shown in the figure below.



PAGE NO 25.21:

Question 1:

The pie-chart given in Fig. 25.17 represents the expenditure on different items in constructing a flat in Delhi. If the expenditure incurred on cement is Rs 112500, find the following:



(i) Total cost of the flat.
(ii) Expenditure incurred on labour.

ANSWER:

(i) Expenditure incurred on cement $= \frac{\text{Central angle of the corresponding sector} \times \text{Total cost}}{360^\circ}$

Total cost of the flat $= \frac{360^\circ \times 112500}{75^\circ} = \text{Rs } 540000$

(ii) Expenditure incurred on labour $= \frac{\text{Central angle of labour sector} \times \text{Total cost}}{360^\circ}$

$= \frac{100^\circ \times 540000}{360^\circ} = \text{Rs } 150000$

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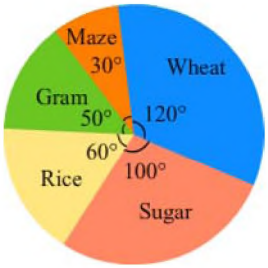
Question 2:

The pie-chart given in Fig. 25.18 shows the annual agricultural production of an Indian state. If the total production of all the commodities is 81000 tonnes, find the production (in tonnes) of
(i) Wheat
(ii) Sugar
(iii) Rice
(iv) Maize
(v) Gram



ANSWER:

(i)

$$\text{Production of wheat} = \frac{\text{Central angle for wheat} \times \text{Total production}}{360^\circ}$$

$$= \frac{120^\circ \times 81000}{360^\circ} = 27000 \text{ tonnes}$$

(ii)

$$\text{Production of sugar} = \frac{\text{Central angle for sugar} \times \text{Total production}}{360^\circ}$$

$$= \frac{10^\circ \times 81000}{360^\circ} = 22500 \text{ tonnes}$$

(iii)

$$\text{Production of rice} = \frac{\text{Central angle for Rice} \times \text{Total production}}{360^\circ}$$

$$= \frac{60^\circ \times 81000}{360^\circ} = 13500 \text{ tonnes}$$

(iv)

$$\text{Production of maize} = \frac{\text{Central angle for maize} \times \text{Total production}}{360^\circ}$$

$$= \frac{30^\circ \times 81000}{360^\circ} = 6750 \text{ tonnes}$$

(v)

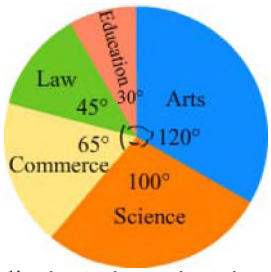
$$\text{Production of gram} = \frac{\text{Central angle for Gram} \times \text{Total production}}{360^\circ}$$

$$= \frac{120^\circ \times 81000}{360^\circ} = 11250 \text{ tonnes}$$

PAGE NO 25.22:

Question 3:

The following pie-chart shows the number of students admitted in different faculties of a college. If 1000 students are admitted in Science answer the following:



(i) What is the total number of students?
(ii) What is the ratio of students in science and arts?

ANSWER:

(i)

$$\text{Students in science} = \frac{\text{Central angle of the corresponding sector} \times \text{Total students}}{360^\circ}$$

$$1000 = \frac{100^\circ \times \text{Total students}}{360^\circ}$$

$$\therefore \text{Total students} = 3600$$

(ii)

$$\text{Students in arts} = \frac{\text{Central angle for arts} \times \text{Total students}}{360^\circ}$$

$$= \frac{120^\circ \times 3600}{360^\circ} = 1200$$

$$\therefore \text{Ratio of students in science and arts} = 1000 : 1200 = 5 : 6$$

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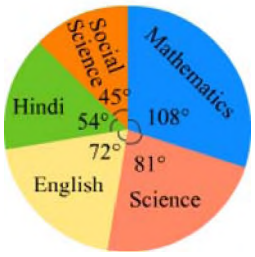
Question 4:

In Fig. 25.20, the pie-chart shows the marks obtained by a student in an examination. If the student secures 440 marks in all, calculate his marks in each of the given subjects.



ANSWER:

Marks secured in mathematics = (108 x 440)/360 marks = 132 marks
Marks secured in science = (81 x 440)/360 marks = 99 marks
Marks secured in English = (72 x 440)/360 marks = 88 marks
Marks secured in Hindi = (54 x 440)/360 marks = 66 marks
Marks secured in social science = (45 x 440)/360 marks = 55 marks

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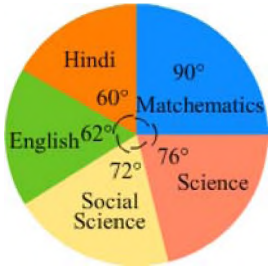
Question 5:

In Fig. 25.21, the pie-chart shows the marks obtained by a student in various subjects. If the student scored 135 marks in mathematics, find the total marks in all the subjects. Also, find his score in individual subjects.



ANSWER:

$$\text{Marks scored in mathematics} = \frac{\text{Central angle of corresponding sector} \times \text{Total Marks}}{360^\circ}$$

$$135 = \frac{90^\circ \times \text{Total}}{360^\circ}$$

$$\text{Total Marks} = 540$$

Marks scored in Hindi = (Central angle of Hindi x Total)/360
= (60 x 540)/360 marks = 90 marks
Similarly, marks scored in science = (76 x 540) /360 marks = 114 marks
Marks scored in social science = (72 x 540) /360 marks = 108 marks
Marks scored in English = (62 x 540)/360 marks = 93 marks

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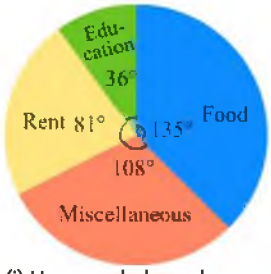
Question 6:

The following pie-chart shows the monthly expenditure of Shikha on various items. If she spends Rs 16000 per month, answer the following questions:



(i) How much does she spend on rent?
(ii) How much does she spend on education?
(iii) What is the ratio of expenses on food and rent?

ANSWER:

$$\text{(i) Money spent on rent} = \frac{\text{Central angle of the corresponding sector} \times \text{Total Money spent}}{360^\circ}$$

$$= \frac{81^\circ \times 16000}{360^\circ} = \text{Rs } 3,600$$

$$\text{(ii) Money spent on education} = \frac{\text{Central angle of the corresponding sector} \times \text{Total Money spent}}{360^\circ}$$

$$= \frac{36^\circ \times 16000}{360^\circ} = \text{Rs } 1,600$$

$$\text{(iii) Money spent on food} = \frac{\text{Central angle of the corresponding sector} \times \text{Total Money spent}}{360^\circ}$$

$$= \frac{135^\circ \times 16000}{360^\circ} = 6,000$$

$$\text{Ratio of expenses on food and rent} = \frac{6000}{3600} = \frac{5}{3}$$

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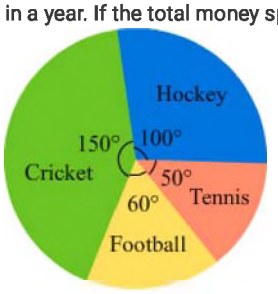
Question 7:

The pie chart (as shown in the figure 25.23) represents the amount spent on different sports by a sports club in a year. If the total money spent by the club on sports is Rs 1,08,000, find the amount spent on each sport.



ANSWER:

$$\text{Amount spent on cricket} = \frac{\text{Central angle of the corresponding sector} \times \text{Total Money spent}}{360^\circ}$$

$$= \frac{150^\circ \times 108000}{360^\circ} = \text{Rs } 45,000$$

$$\text{Amount spent on hockey} = \frac{\text{Central angle of the corresponding sector} \times \text{Total Money spent}}{360^\circ}$$

$$= \frac{100^\circ \times 108000}{360^\circ} = \text{Rs } 30,000$$

$$\text{Amount spent on football} = \frac{\text{Central angle of the corresponding sector} \times \text{Total Money spent}}{360^\circ}$$

$$= \frac{60^\circ \times 108000}{360^\circ} = \text{Rs } 18,000$$

$$\text{Amount spent on tennis} = \frac{\text{Central angle of the corresponding sector} \times \text{Total Money spent}}{360^\circ}$$

$$= \frac{50^\circ \times 108000}{360^\circ} = \text{Rs } 15,000$$