

Chapter : 23. PIE CHARTS

Exercise : 23A

Question: 1

The monthly incom

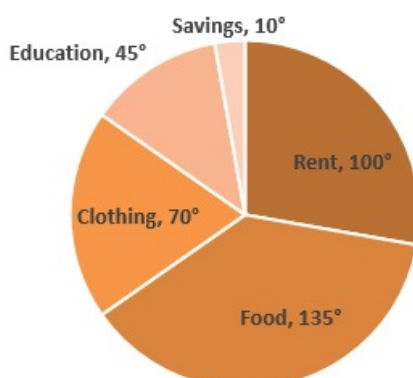
Solution:

Total monthly income = Rs.28800.

$$\text{Central Angle of Component} = \frac{\text{Value of Component}}{\text{Total Value}} \times 360^{\circ}$$

Calculation of central angles

Item	Amount (in Rs.)	Central Angle
Rent	8000	$\frac{8000}{28800} \times 360^{\circ} = 100^{\circ}$
Food	10800	$\frac{10800}{28800} \times 360^{\circ} = 135^{\circ}$
Clothing	5600	$\frac{5600}{28800} \times 360^{\circ} = 70^{\circ}$
Education	3600	$\frac{3600}{28800} \times 360^{\circ} = 45^{\circ}$
Savings	800	$\frac{800}{28800} \times 360^{\circ} = 10^{\circ}$



Question: 2

There are 900 cre

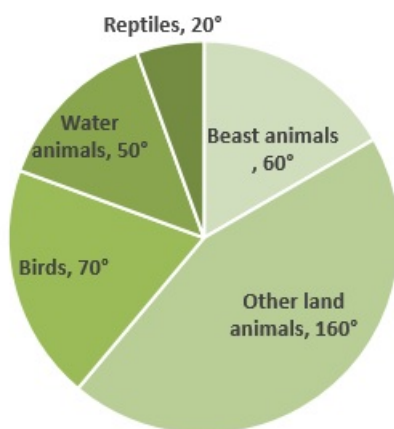
Solution:

Total creatures = 900

$$\text{Central Angle of Component} = \frac{\text{Value of Component}}{\text{Total Value}} \times 360^\circ$$

Calculation of central angles

Creatures	No. of Creatures	Central Angle
Beast Animals	150	$\frac{150}{900} \times 360^\circ = 60^\circ$
Other Land Animals	400	$\frac{400}{900} \times 360^\circ = 160^\circ$
Birds	175	$\frac{175}{900} \times 360^\circ = 70^\circ$
Water Animals	125	$\frac{125}{900} \times 360^\circ = 50^\circ$
Reptiles	50	$\frac{50}{900} \times 360^\circ = 20^\circ$



Question: 3

Various modes of

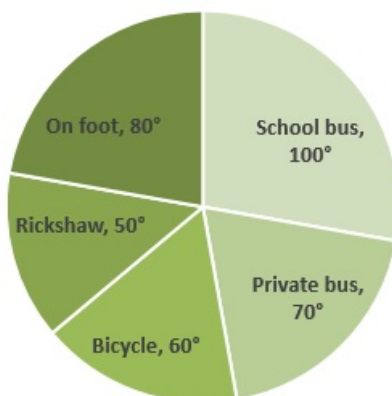
Solution:

Total Students = 1260

$$\text{Central Angle of Component} = \frac{\text{Value of Component}}{\text{Total Value}} \times 360^{\circ}$$

Calculation of central angles

Mode of Transport	No of Students	Central Angle
School Bus	350	$\frac{350}{1260} \times 360^{\circ} = 100^{\circ}$
Private Bus	245	$\frac{245}{1260} \times 360^{\circ} = 70^{\circ}$
Bicycle	210	$\frac{210}{1260} \times 360^{\circ} = 60^{\circ}$
Rickshaw	175	$\frac{175}{1260} \times 360^{\circ} = 50^{\circ}$
On Foot	280	$\frac{280}{1260} \times 360^{\circ} = 80^{\circ}$



Question: 4

The data given be

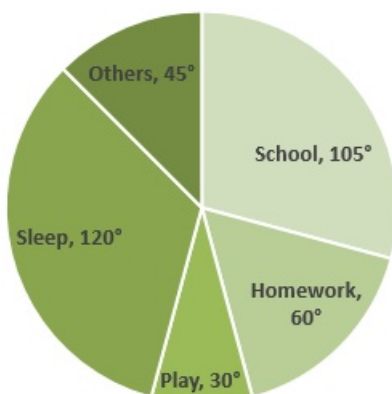
Solution:

Total No. of Hours = 24

$$\text{Central Angle of Component} = \frac{\text{Value of Component}}{\text{Total Value}} \times 360^\circ$$

Calculation of central angles

Activity	No of Hours	Central Angle
School	7	$\frac{7}{24} \times 360^\circ = 105^\circ$
Homework	4	$\frac{4}{24} \times 360^\circ = 60^\circ$
Play	2	$\frac{2}{24} \times 360^\circ = 30^\circ$
Sleep	8	$\frac{8}{24} \times 360^\circ = 120^\circ$
Others	3	$\frac{3}{24} \times 360^\circ = 45^\circ$



Question: 5

The data of relig

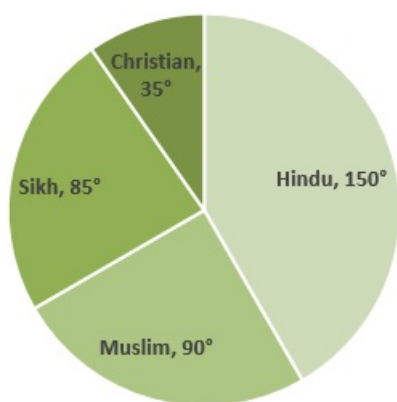
Solution:

Total No. of Workers = 1080

$$\text{Central Angle of Component} = \frac{\text{Value of Component}}{\text{Total Value}} \times 360^\circ$$

Calculation of central angles

Religion	No. of Workers	Central Angle
Hindu	450	$\frac{450}{1080} \times 360^\circ = 150^\circ$
Muslim	270	$\frac{270}{1080} \times 360^\circ = 90^\circ$
Sikh	255	$\frac{255}{1080} \times 360^\circ = 85^\circ$
Christian	105	$\frac{105}{1080} \times 360^\circ = 35^\circ$

**Question: 6**

The marks obtained

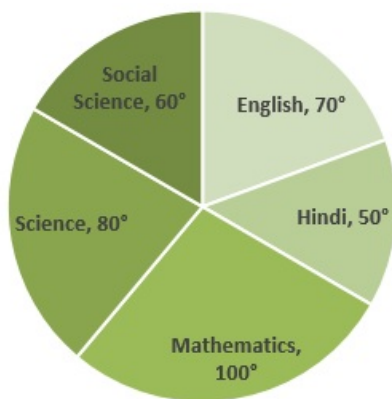
Solution:

$$\text{Total Marks} = (105 + 75 + 150 + 120 + 90) = 540$$

$$\text{Central Angle of Component} = \frac{\text{Value of Component}}{\text{Total Value}} \times 360^\circ$$

Calculation of central angles

Subject	Marks Obtained	Central Angle
English	105	$\frac{105}{540} \times 360^\circ = 70^\circ$
Hindi	75	$\frac{75}{540} \times 360^\circ = 50^\circ$
Mathematics	150	$\frac{150}{540} \times 360^\circ = 100^\circ$
Science	120	$\frac{120}{540} \times 360^\circ = 80^\circ$
Social Science	90	$\frac{90}{540} \times 360^\circ = 60^\circ$



Question: 7

The following tab

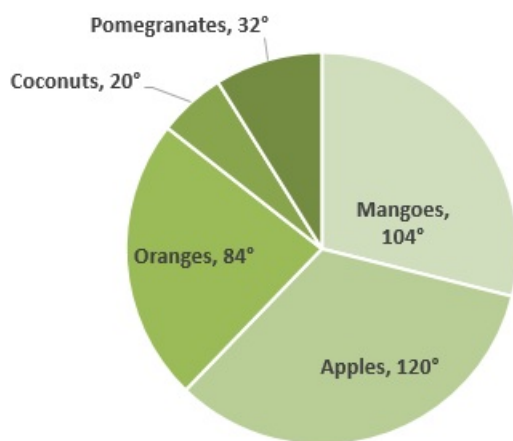
Solution:

Total No. of Fruits = $(26 + 30 + 21 + 5 + 8) = 90$

Central Angle of Component = $\frac{\text{Value of Component}}{\text{Total Value}} \times 360^\circ$

Calculation of central angles

Fruit	No of Fruits	Central Angle
Mangoes	26	$\frac{26}{90} \times 360^\circ = 104^\circ$
Apples	30	$\frac{30}{90} \times 360^\circ = 120^\circ$
Oranges	21	$\frac{21}{90} \times 360^\circ = 84^\circ$
Coconuts	5	$\frac{5}{90} \times 360^\circ = 20^\circ$
Pomegranates	8	$\frac{8}{90} \times 360^\circ = 32^\circ$



Question: 8

The following dat

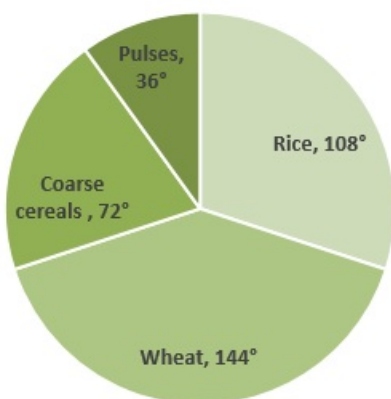
Solution:

Total Production = $(57 + 76 + 38 + 19) = 190$

Central Angle of Component = $\frac{\text{Value of Component}}{\text{Total Value}} \times 360^\circ$

Calculation of central angles

Food grain	Production (in million tons)	Central Angle
Rice	57	$\frac{57}{190} \times 360^\circ = 108^\circ$
Wheat	76	$\frac{76}{190} \times 360^\circ = 144^\circ$
Coarse Cereals	38	$\frac{38}{190} \times 360^\circ = 72^\circ$
Pulses	19	$\frac{19}{190} \times 360^\circ = 36^\circ$



Question: 9

Given below is th

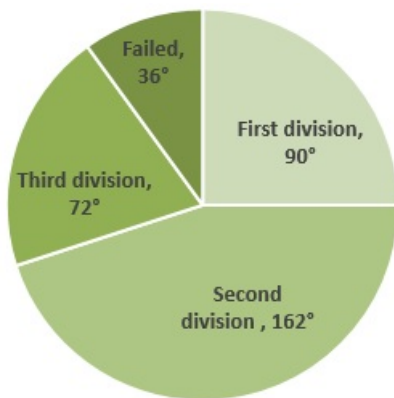
Solution:

$$\text{Total Students} = (25 + 45 + 20 + 10) = 100$$

$$\text{Central Angle of Component} = \frac{\text{Value of Component}}{\text{Total Value}} \times 360^\circ$$

Calculation of central angles

Category	Students (in percentage)	Central Angle
First Division	25	$\frac{25}{100} \times 360^\circ = 90^\circ$
Second Division	45	$\frac{45}{100} \times 360^\circ = 162^\circ$
First Division	20	$\frac{20}{100} \times 360^\circ = 72^\circ$
Failed	10	$\frac{10}{100} \times 360^\circ = 36^\circ$



Question: 10

The following tab

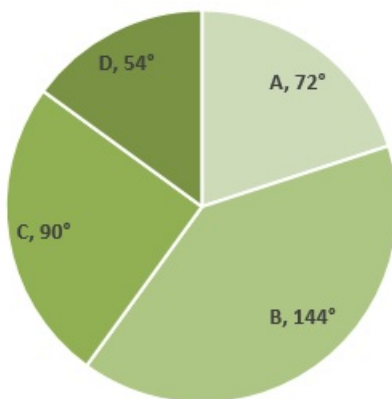
Solution:

Total Students = $(20 + 40 + 25 + 15) = 100$

Central Angle of Component = $\frac{\text{Value of Component}}{\text{Total Value}} \times 360^\circ$

Calculation of central angles

Brand	Percentage of Buyers	Central Angle
A	20	$\frac{20}{100} \times 360^\circ = 72^\circ$
B	40	$\frac{40}{100} \times 360^\circ = 144^\circ$
C	25	$\frac{25}{100} \times 360^\circ = 90^\circ$
D	15	$\frac{15}{100} \times 360^\circ = 54^\circ$



Exercise : 23B

Question: 1

A man's mo

Solution:

Monthly Salary = Rs.24000

Expense on Travel = Rs.2500

Central Angle of Component = $\frac{\text{Value of Component}}{\text{Total Value}} \times 360^\circ$

$$= \frac{2500}{24000} \times 360^\circ$$

$$= 37.5^\circ$$

Question: 2

If 35% of the peo

Solution:

Total People residing in locality = 100%

Sikh People residing in same locality = 35%

$$\text{Central Angle of Component} = \frac{\text{Value of Component}}{\text{Total Value}} \times 360^\circ$$

$$= \frac{35}{100} \times 360^\circ$$

$$= 126^\circ$$

So, Central angle of sector for Sikh community will be 126° .

Question: 3

If in the pie cha

Solution:

Total No. of Students = 1650

Central Angle of sector representing Arts Student = 48°

Let x be the no. of students opted for Arts Stream

$$\text{Central Angle of Component} = \frac{\text{Value of Component}}{\text{Total Value}} \times 360^\circ$$

$$48 = \frac{x}{1650} \times 360^\circ$$

$$X = \frac{48 \times 1650}{360}$$

$$= 220$$

So, No. of Students opted for Arts Stream = 220.

Question: 4

In the pie chart

Solution:

Angel of sector for Students reading novel = 81° .

Percentage of Students interested in reading no

$$= \frac{\text{Angle of sector}}{360} \times 100^\circ$$

$$= \frac{81}{360} \times 100$$

$$= 22.5\%$$