

CHAPTER NINE

PIE CHART

PIE CHART:

(Q1) In a classroom, there are 10 students. Three study Maths, five study physics and two study geography .Represent this on a pie chart.

Solution

Total number of students = 10.

For Maths:

Number of those who study Maths = 3.

=> The angle representing those who study Maths = $\frac{3}{10} \times 360 = 108^{\circ}$.

For Physics:

Number of those who study physics = 5.

=>The angle representing those who study physics = 180° .

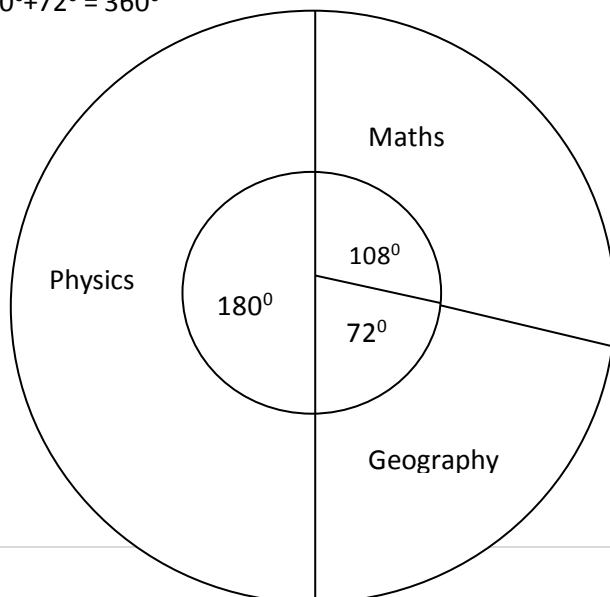
For Geography:

Number of those who study geography = 2 .

=>Angle representing geography students = $\frac{2}{10} \times 360 = 72^{\circ}$.

N/B: All the calculated angles when added together must be equal to 360° .

$$\Rightarrow 108^{\circ} + 180^{\circ} + 72^{\circ} = 360^{\circ}$$



N/B: The pie chart must be drawn accurately, using a protractor.

(Q2) During a school party, 40 students took in Banku, 60 took in rice, 30 took in cassava and 50 took in Tuo. Represent this on a pie chart.

Solution

Total number of students = $40 + 30 + 50 + 60 = 180^0$.

Banku:

Number of students who ate Banku = 40

=>The angle representing those who took in Banku =

$$\frac{40}{180} \times 360^0 = 80^0$$

Rice:

Number of students who ate rice = 60.

=>The angle which represents those who took in rice =

$$\frac{60}{180} \times 360^0 = 120^0$$

Cassava:

The number of those who took in cassava= 30.

=> The angle representing those who took in cassava =

$$\frac{30}{180} \times 360^0 = 60^0.$$

Tuo:

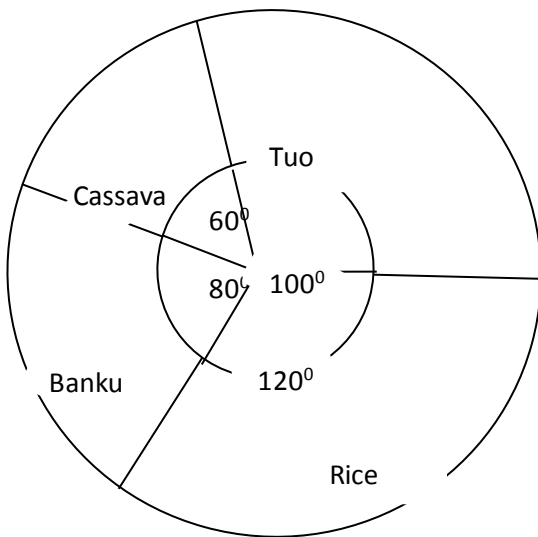
The number of those who took in Tuo = 50.

=> The angle representing those who took in Tuo=

$$\frac{50}{180} \times 360^0 = 100^0$$

N/B: As already stated, the sum of all the angles calculated must be equal to 360^0 and if this is not so, then there is a mistake somewhere.

i.e. $100^{\circ} + 60^{\circ} + 120^{\circ} + 80^{\circ} = 360^{\circ}$



(Q3)

District	Production/tones
Bibiani	600
Nkawkaw	900
Wiaso	1800
Ahafo	1500
Agona	2400

The given table shows the production of timber in five districts in Ghana, for a certain year.

- Draw a pie chart to represent this information.
- What percentage of timber production was from Nkawkaw

Solution

- Total production = $600 + 900 + 1800 + 1500 + 2400 = 7200\text{t}$.

Bibiani:

Production from Bibiani = 600t .

Angle representing this production

$$= \frac{600}{7200} \times 360^\circ = 30^\circ.$$

Nkawkaw:

Production from Nkawkaw = 900t.

Angle which represents this production

$$= \frac{900}{7200} \times 360^\circ = 45^\circ$$

Wiaso:

Production from Wiaso = 1800t

Angle representing this production

$$= \frac{1800}{7200} \times 360 = 90^\circ.$$

Ahafo:

Production from Ahafo = 1800t.

Angle representing this production

$$= \frac{1800}{7200} \times 360 = 90^\circ.$$

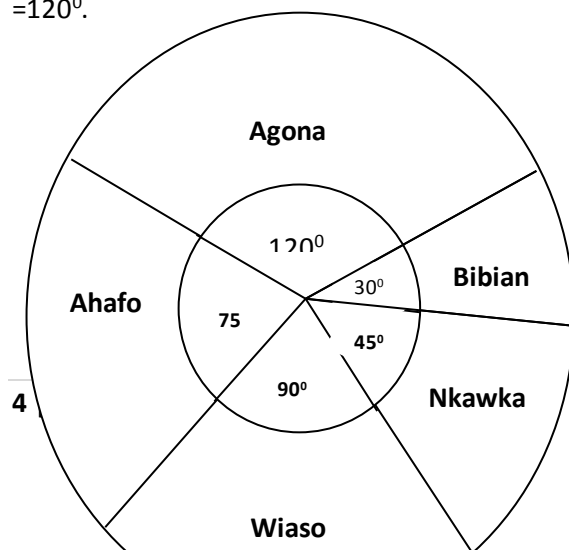
Agona:

Production = 2400t.

Angle representing this production

$$= \frac{2400}{7200} \times 360^\circ$$

$$= 120^\circ.$$



Percentage of production from Nkawkaw

$$= \frac{900}{7200} \times 100 = 12.5\%$$

(Q4)

Agric	30%
Power	20%
Transport	$x\%$
Entertainment	40%

The table shows the percentage allocation of funds for the welfare of a village.

(a) Illustrate this information on a pie chart.

(b) If the total amount allocated was ₦4000, determine the allocation for power and transport.

N/B: Since we are dealing with percentage, then the total is 100 .

=>We must first determine the value of x .

Solution

Since the total = 100.

$$\Rightarrow 30^0 + 20^0 + x^0 + 40^0 = 100,$$

$$\Rightarrow 90^0 + x^0 = 100^0$$

$$\Rightarrow x = 10\%.$$

Agric:

Angle representing Agric.

$$= \frac{30}{100} \times 360^0 = 108^0.$$

Power:

Angle representing power

$$= \frac{20}{100} \times 360 = 72^\circ.$$

Transport:

Angle representing transport

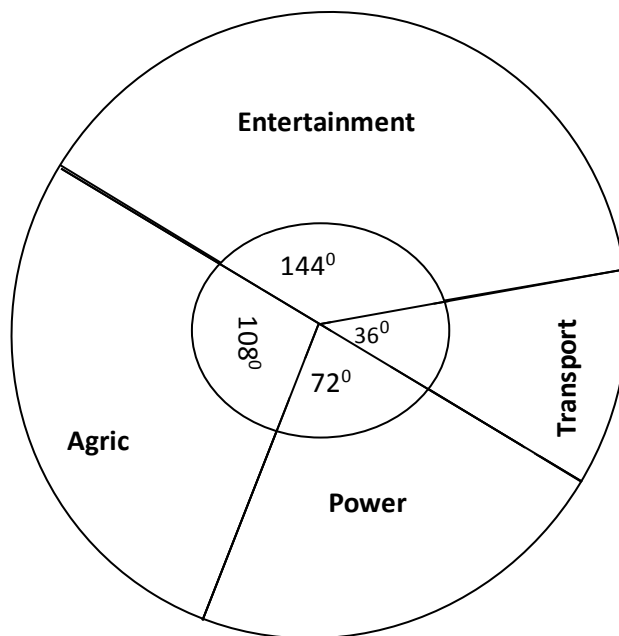
$$= \frac{x}{100} \times 360 = \frac{10}{100} \times 360 = 36^\circ \text{ since } x = 10\%.$$

Entertainment:

Angle representing entertainment

$$= \frac{40}{100} \times 360 = 144^\circ$$

(a)



(c) Total amount allocated = ₦4000.

Allocation for power = 20% of 4000

$$= \frac{20}{100} \times 4000 = ₦800$$

(Q 5) Last term, Adwoa Mansah spent 25% of her pocket money on books, 30% on food, 20% on drinks and the rest on entertainment.

(a) Represent this on a pie chart.

(b) If her pocket money for the term was ₺1000, how much did she spend on entertainment.

Solution

Let $x\%$ = the percentage of the amount spent on entertainment.

Since the total = 100,

$$\Rightarrow 25+30+20+x = 100$$

$$\Rightarrow 75 + x = 100,$$

$$\Rightarrow x = 100 - 75$$

$$\Rightarrow x = 25$$