

P10/P11- Pie Charts

OCR

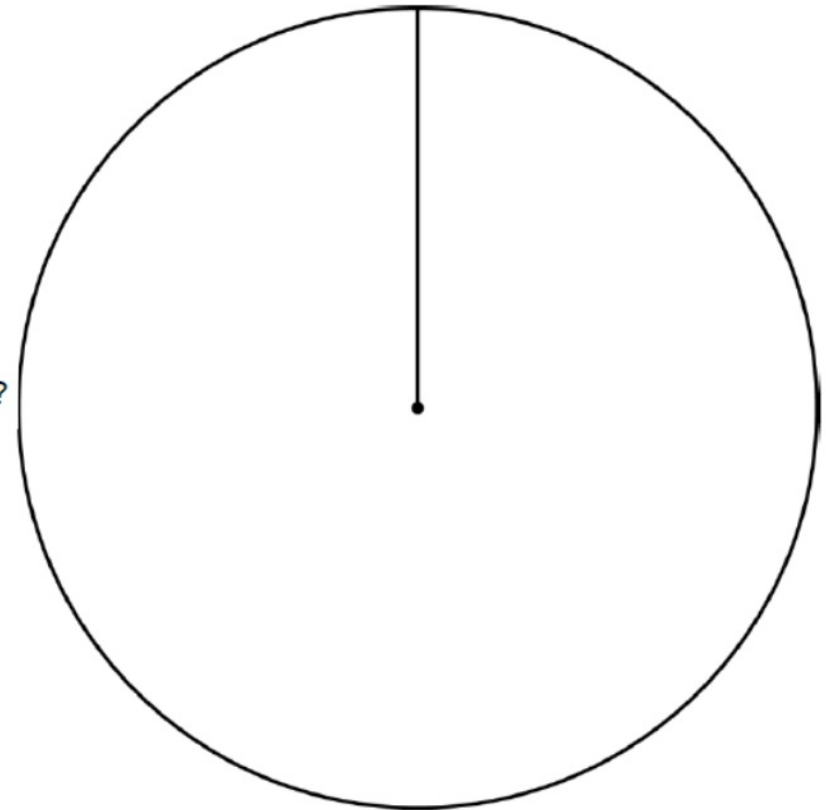
8 Sophia was asked how she spends her leisure time.

She replied

- I play football for $\frac{1}{4}$ of the time
- I meet with my friends for $\frac{2}{5}$ of the time
- I use my tablet for $\frac{3}{20}$ of the time
- I listen to music for the rest of the time.

(a) Complete the pie chart showing how Sophia spends her leisure time.

(b) What fraction of her leisure time does Sophia spend listening to music?



8 Sophia was asked how she spends her leisure time.

Created by W Neill

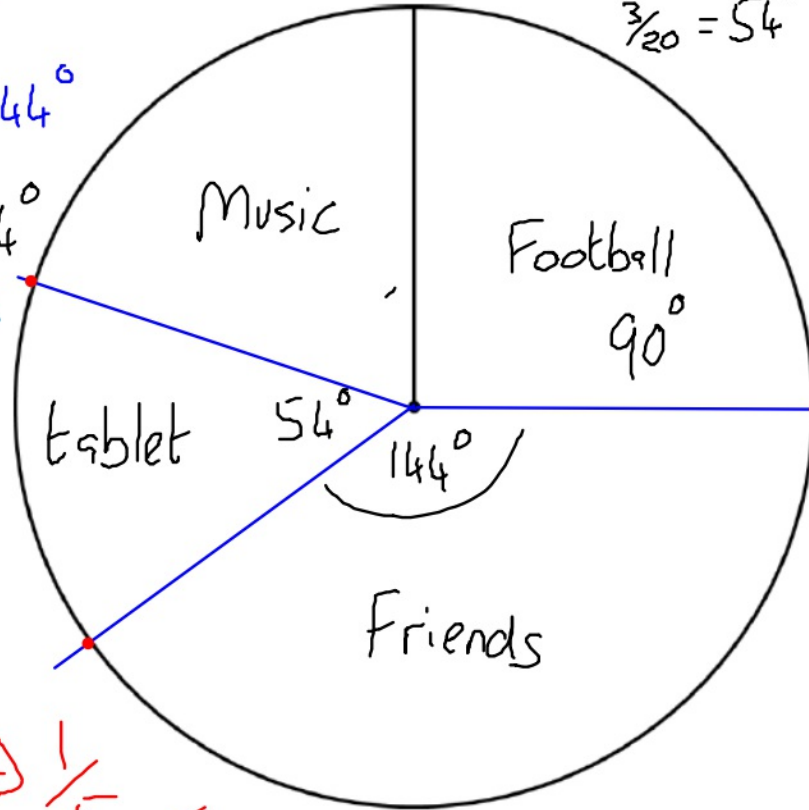
She replied

- I play football for $\frac{1}{4}$ of the time $\frac{1}{4}$ of $360^\circ = 90^\circ$
- I meet with my friends for $\frac{2}{5}$ of the time $\frac{2}{5}$ of $360^\circ = 144^\circ$
- I use my tablet for $\frac{3}{20}$ of the time $\frac{3}{20}$ of $360^\circ = 54^\circ$
- I listen to music for the rest of the time.

↳ leave this as what is left over.

(a) Complete the pie chart showing how Sophia spends her leisure time.

$\frac{072}{5 \mid 360}$ $72 \times 2 = 144^\circ$
 $\frac{1}{20} = 18^\circ$
 $\frac{3}{20} = 54^\circ$



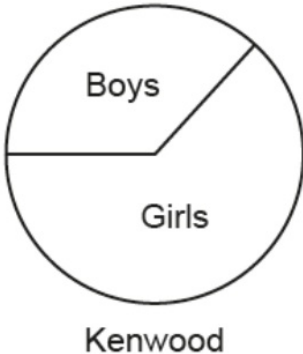
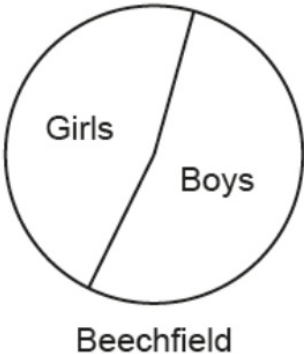
(b) What fraction of her leisure time does Sophia spend listening to music?

$$\begin{array}{r} 144 \\ 54 \\ \hline 190 \\ 288 \end{array}$$

$$\begin{array}{r} 2510 \\ 360 \\ -288 \\ \hline 72 \end{array}$$

$$\frac{72}{360} \checkmark \rightarrow \frac{1}{5} \checkmark$$

(b) The pie charts below show the proportion of boys and girls at two other schools.



Neil says

The pie charts show that there are more girls at Kenwood than at Beechfield.

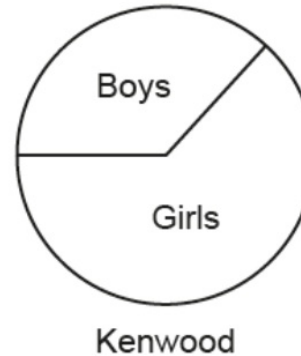
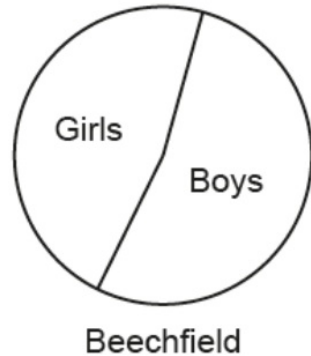
Explain why Neil may be wrong.

.....

.....

..... [1]

(b) The pie charts below show the proportion of boys and girls at two other schools.



Neil says

The pie charts show that there are more girls at Kenwood than at Beechfield.

Explain why Neil may be wrong.

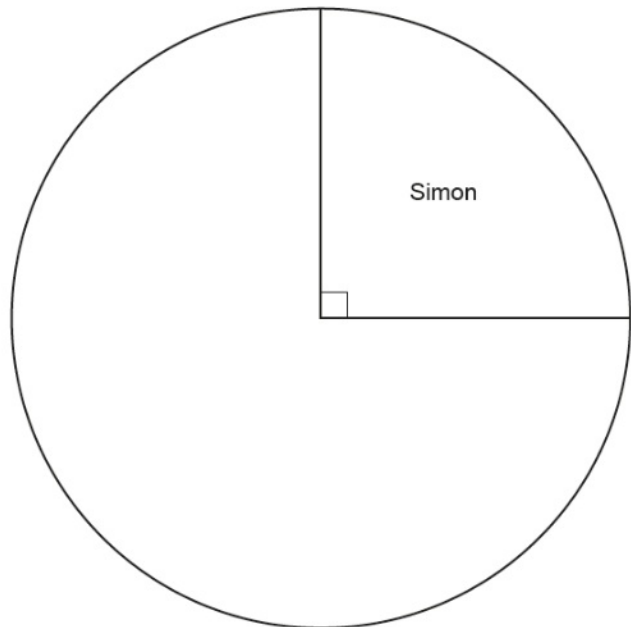
You don't have numbers for either school so
you don't know

[1]

9 Jorge recorded the scorers of 120 goals.
He started to draw a pie chart to show the results.

Video created by W Neill

(a) How many goals did Simon score?



(a)

(b) The table shows the **other** players who scored goals.

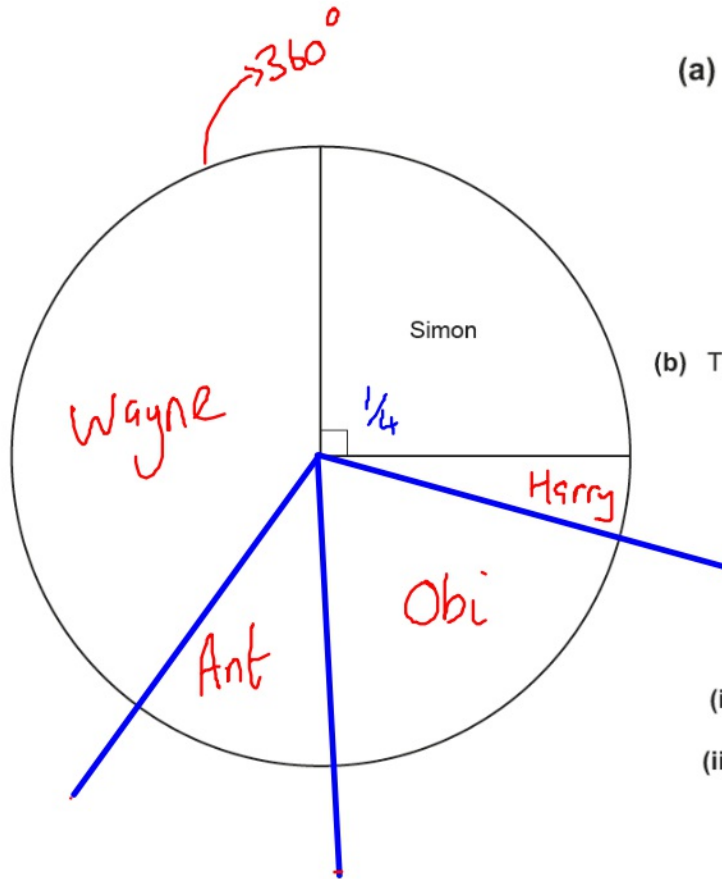
Name of scorer	Number of goals	Angle of sector
Wayne	48	144°
Harry	5	
Obi		72°
Antony		

(i) Complete the table. [3]

(ii) Complete the pie chart. [2]

9 Jorge recorded the scorers of 120 goals. He started to draw a pie chart to show the results.

Video created by W Neill



(a) How many goals did Simon score?

$\frac{1}{4}$ of 120

(a) 30

(b) The table shows the **other** players who scored goals.

Name of scorer	Number of goals	Angle of sector
Wayne	48	144°
Harry	5	15°
Obi	24	72°
Antony	13	39°

(i) Complete the table.

[3]

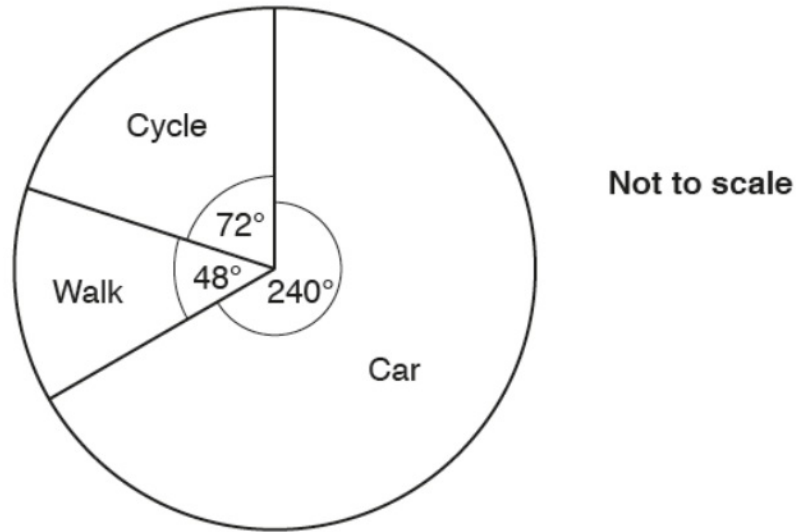
(ii) Complete the pie chart.

[2]

$\div 48$ $\left(\begin{array}{l} 48 \text{ goals} = 144^\circ \\ 1 \text{ goal} = 3^\circ \\ 5 \text{ goals} = 15^\circ \\ \phantom{5 \text{ goals}} = 72^\circ \\ 13 \phantom{\text{ goals}} = 39^\circ \end{array} \right) \div 48$

10 This pie chart shows how the employees of a business travel to work.

Created by W Neill

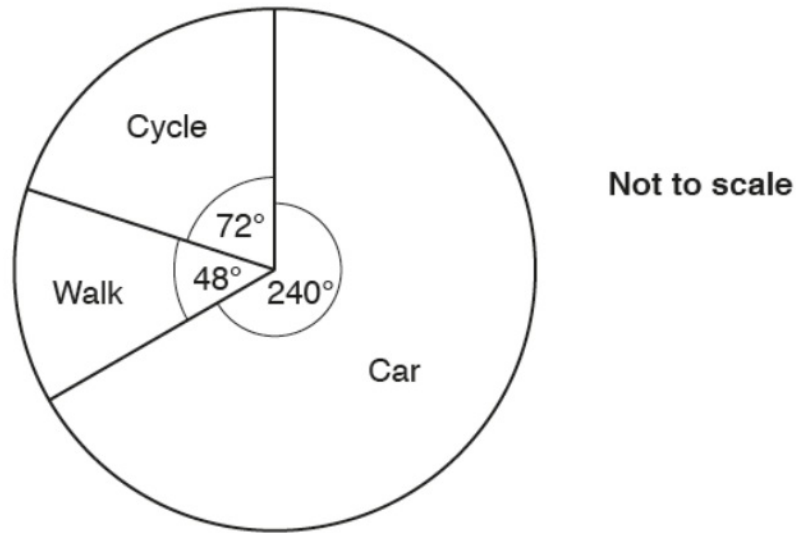


- (a) Find the ratio of the number of employees who cycle to work to the number of employees who walk to work.
Give your answer in its simplest form.

(a) : [2]

10 This pie chart shows how the employees of a business travel to work.

Created by W Neill



- (a) Find the ratio of the number of employees who cycle to work to the number of employees who walk to work.
Give your answer in its simplest form.

$$C : W$$
$$72 : 48$$
$$6 : 4$$

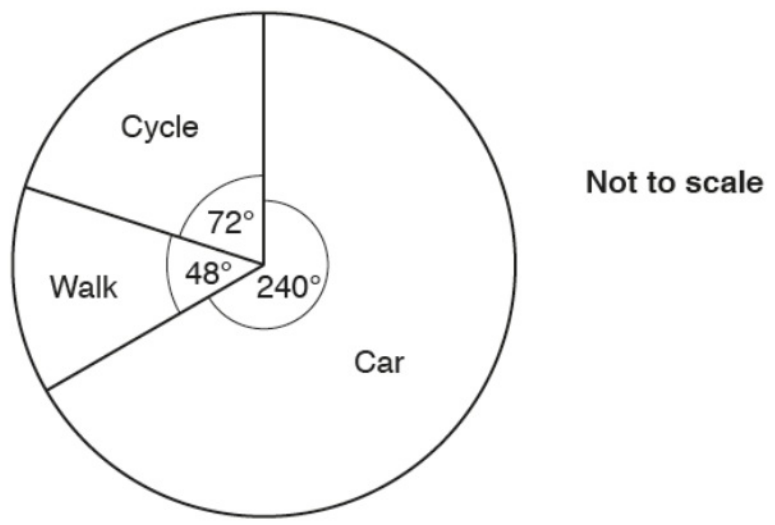
(a) 3 : 2 [2]

(b) 80 employees travel to work by car.

Created by W Neill

Work out the number of employees who cycle to work and the number of employees who walk to work.

This pie chart shows how the employees of a business travel to work.



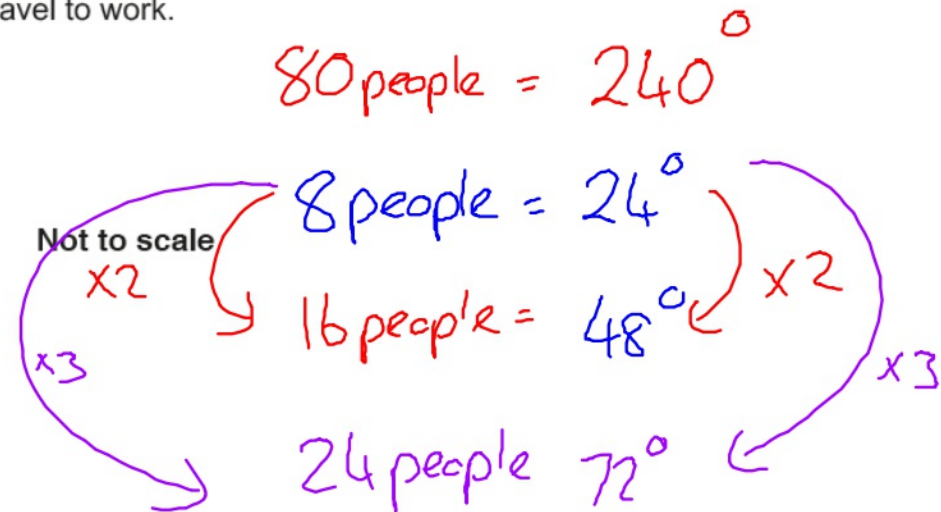
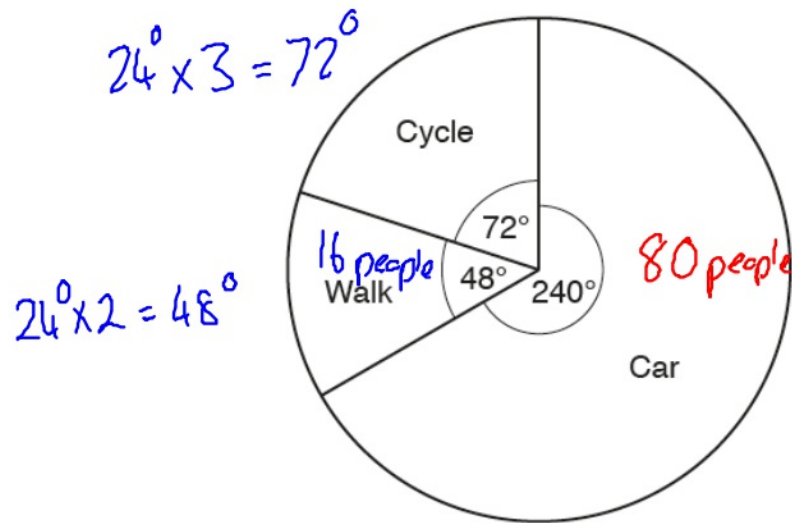
(b) cycle
walk [3]

(b) 80 employees travel to work by car.

Created by W Neill

Work out the number of employees who cycle to work and the number of employees who walk to work.

This pie chart shows how the employees of a business travel to work.



(b) cycle 24
walk 16 [3]

8 P10/P11 Two groups of students go on a water sport holiday.
Each student chooses one activity.

Students in **Group A** choose from Diving, Swimming, Paddleboarding and Kayaking.
Their choices are to be shown in a pie chart.

(a) Complete this table for Group A.

Activity	Number of students	Angle of sector
Diving	5	60°
Swimming		120°
Paddleboarding		
Kayaking	9	108°

[4]

P10/P11

8 Two groups of students go on a water sport holiday.
Each student chooses one activity.

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(a) Complete this table for Group A.

Activity	Number of students	Angle of sector
Diving	5	60°
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Paddleboarding	6	72°
Kayaking	9	108°

÷12

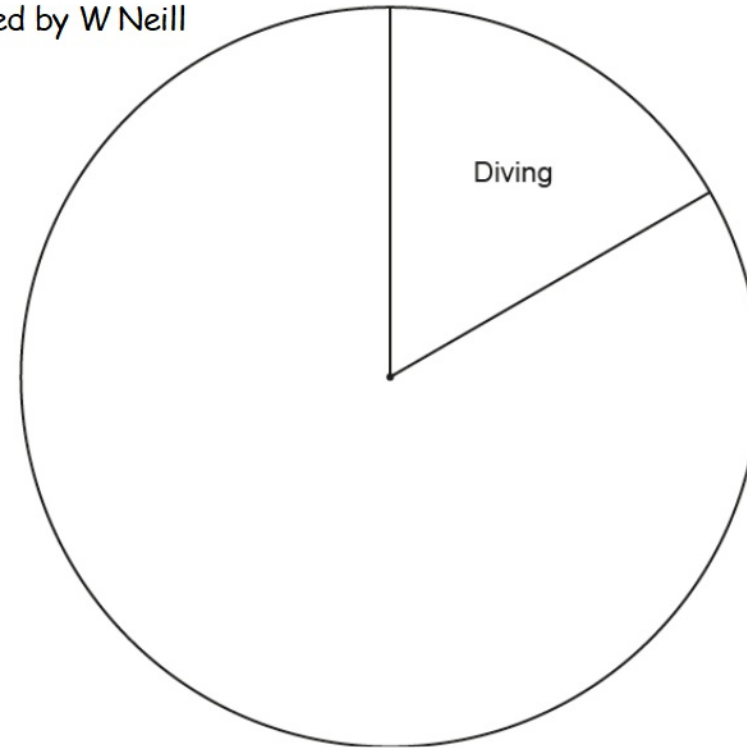
360°
x12

[4]

Created by W Neill

(b) Complete the pie chart for Group A.

Activity	Number of students	Angle of sector
Diving	5	60°
Swimming		120°
Paddleboarding		
Kayaking	9	108°



(c) One student in Group A changes activity.
There is now a new modal activity for Group A.

Write down the student's original activity and new activity.

original activity.....

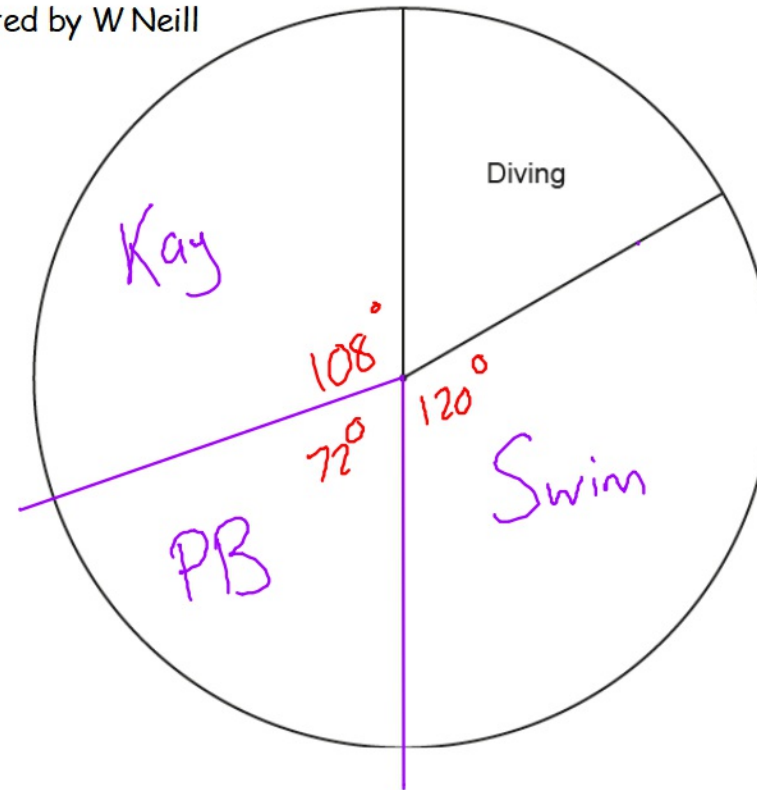
new activity..... [1]

Created by W Neill

(b) Complete the pie chart for Group A.

Activity	Number of students	Angle of sector
Diving	5	60°
Swimming	10	120°
Paddleboarding	6	72°
Kayaking	9	108°

$\xrightarrow{\text{X12}} 360^\circ$



(c) One student in Group A changes activity.
There is now a new modal activity for Group A.

Write down the student's original activity and new activity.

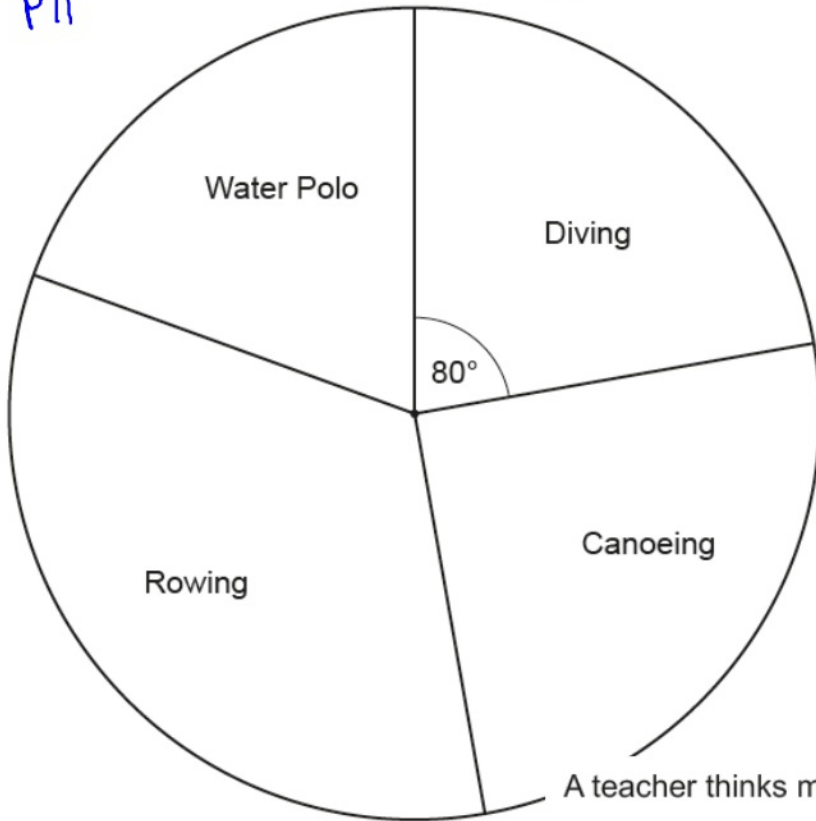
most often

original activity..... Swimming.....
new activity..... Kayaking..... [1]

P11

(d) The choices made by **Group B** are shown in this pie chart.

Created by W Neill



A teacher thinks more students chose Diving in Group B than in Group A.

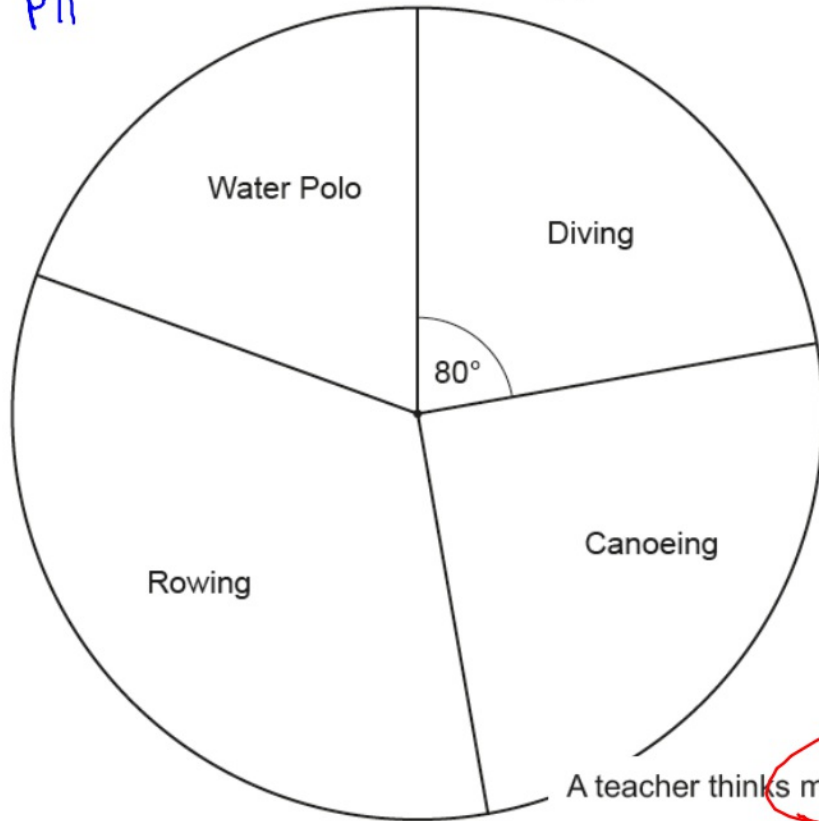
Give a reason why the teacher may be wrong.

.....
..... [1]

P11

(d) The choices made by **Group B** are shown in this pie chart.

Created by W Neill



A teacher thinks more students chose Diving in Group B than in Group A.

Give a reason why the teacher may be wrong.

You do not know how many students are
in each group. So you can't compare. [1]

14 30 people choose their favourite sport.
Matt wants to show their choices in a pie chart.

P10 4 of the people chose 'tennis'.

R26 Work out the angle of the sector for 'tennis'.

..... ° [3]

14 30 people choose their favourite sport.
Matt wants to show their choices in a pie chart.

P10 4 of the people chose 'tennis'.

R26 Work out the angle of the sector for 'tennis'.

4 out of 30

$\frac{4}{30}$ of 360°
X

48^o

.....^o [3]

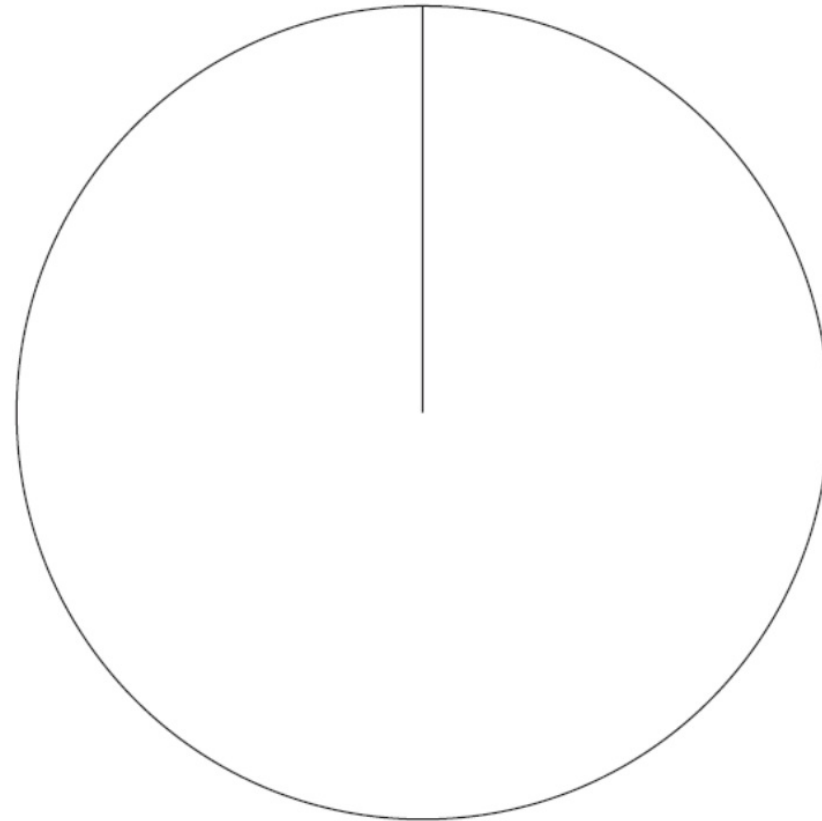
Edexcel

8 Sharon asked each of her friends to name their favourite Olympic sport.

The table below shows information about their answers.

Sport	Frequency
athletics	13
cycling	17
swimming	8
gymnastics	7

Draw an accurate pie chart for this information.



(Total for Question 8 is 3 marks)

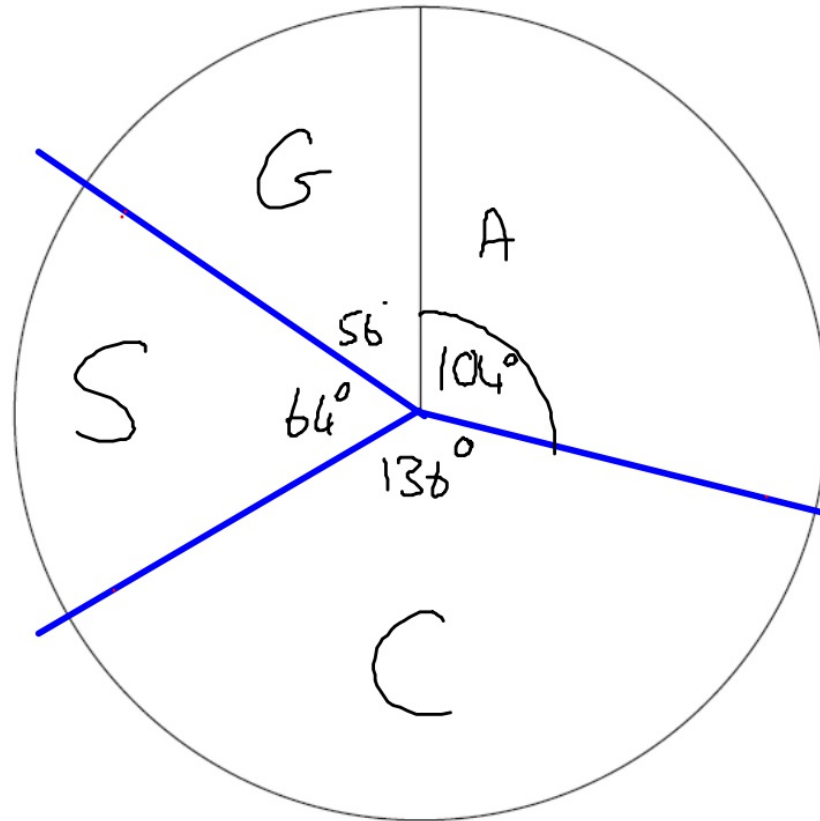
8 Sharon asked each of her friends to name their favourite Olympic sport.

The table below shows information about their answers.

Sport	Frequency	Angle
athletics	13	104
cycling	17	136
swimming	8	64
gymnastics	7	56

Draw an accurate pie chart for this information

Handwritten calculations: $45 \times 8 = 360^\circ$



(Total for Question 8 is 3 marks)

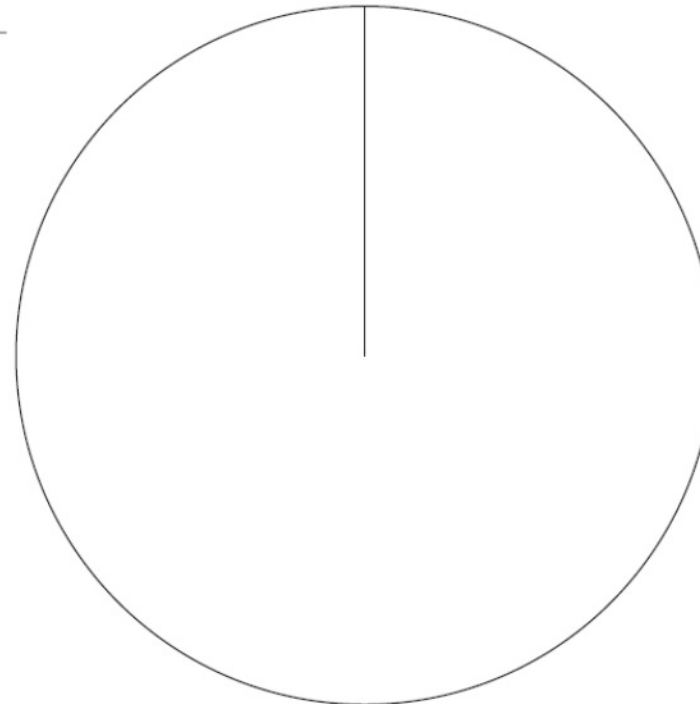
14 Year 9 students from Halle School were asked to choose one language to study.

Video created by W Neill

The table shows information about their choices.

Language	Number of students	
French	56	
Spanish	40	
German	24	

(a) Draw an accurate pie chart to show this information.



14 Year 9 students from Halle School were asked to choose one language to study.

Video created by W Neill

The table shows information about their choices.

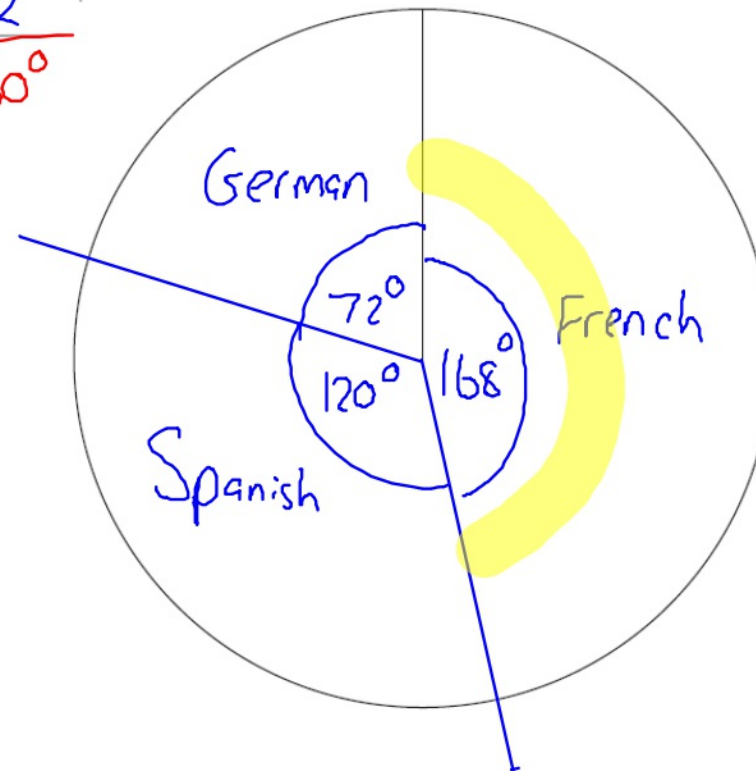
Language	Number of students	Angle
French	56	168
Spanish	40	120
German	24	72

(a) Draw an accurate pie chart to show this information.

$$\begin{array}{r} 56 \\ 40 \\ 24 \\ \hline 120 \end{array}$$

120 $\xrightarrow{\times 3}$ 360

$$\begin{array}{r} 168 \\ 120 \\ 72 \\ \hline 360 \end{array}$$



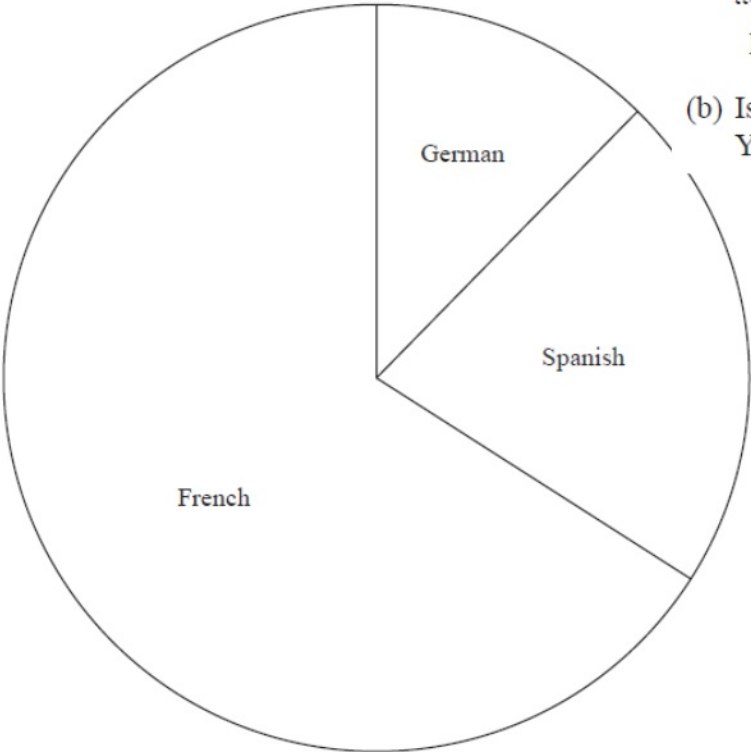
Year 9 students from Lowry School were also asked to choose one language to study.

This accurate pie chart shows information about their choices.

Shameena says,

“The pie chart shows that French was chosen by more Year 9 students at Lowry School than at Halle School.”

(b) Is Shameena right?
You must explain your answer.



Year 9 students from Lowry School were also asked to choose one language to study.

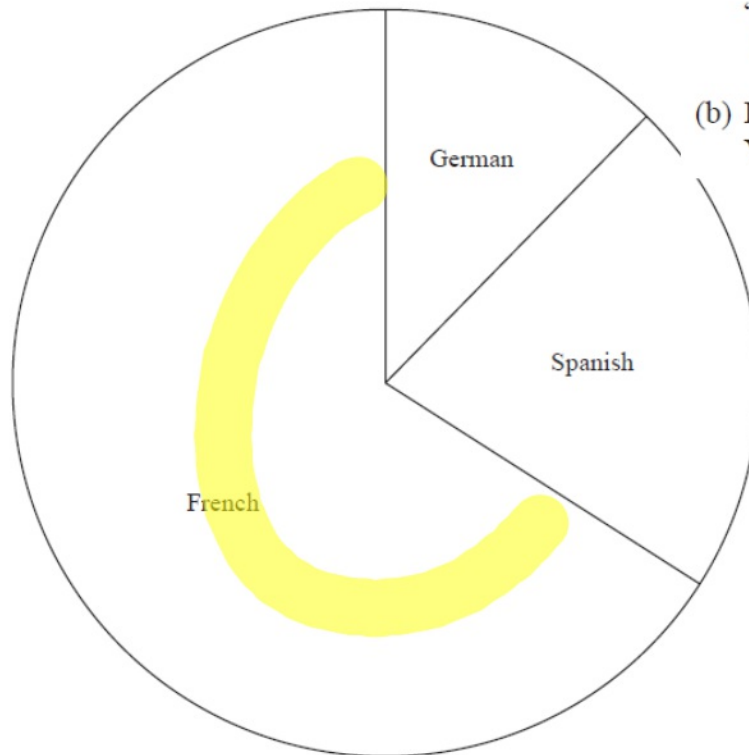
Video created by W Neill

This accurate pie chart shows information about their choices.

Shameena says,

“The pie chart shows that French was chosen by more Year 9 students at Lowry School than at Halle School.”

(b) Is Shameena right?
You must explain your answer.



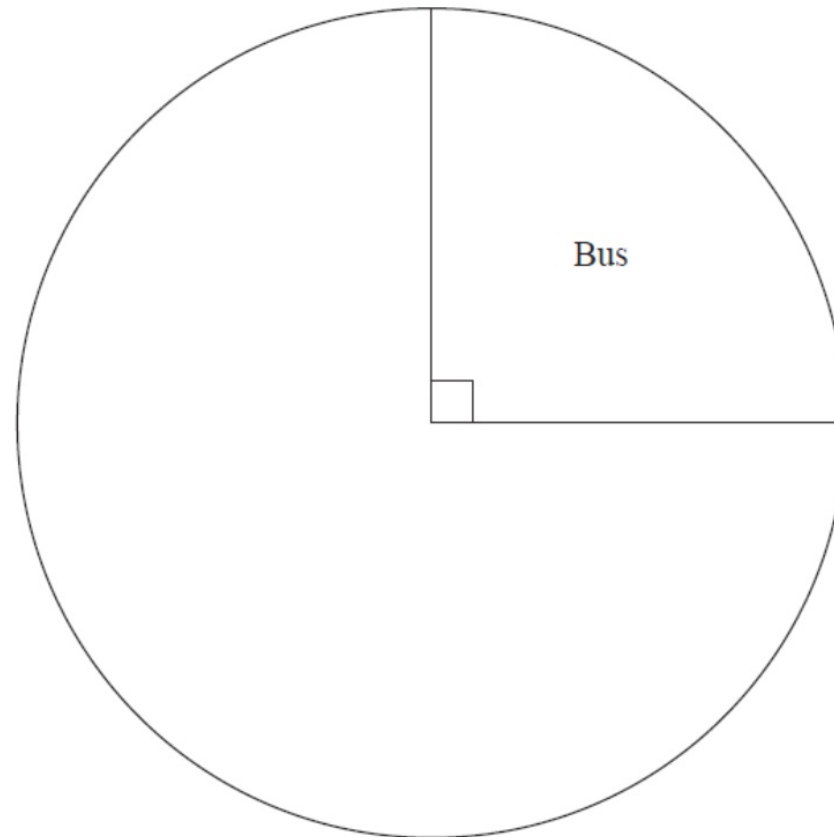
Shameena does not have enough information.

She needs to know how many students are in Lowry school before she can compare numbers.

Created by W Neill

	Bus	Walk	Car	Bicycle
Number of students	15	27	12	6

(b) Complete the pie chart for the information in the table.



Created by W Neill

	Bus	Walk	Car	Bicycle
Number of students	15	27	12	6

Angle

90°

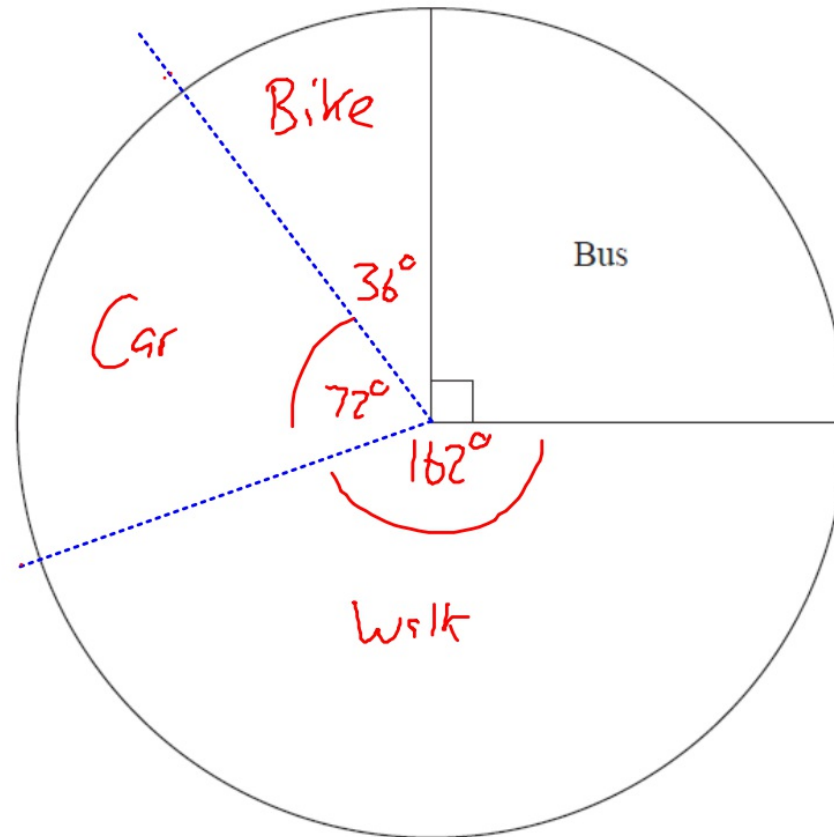
162°

72°

36°

$$= 60$$
$$= 360^\circ \curvearrowright \times 6$$

(b) Complete the pie chart for the information in the table.



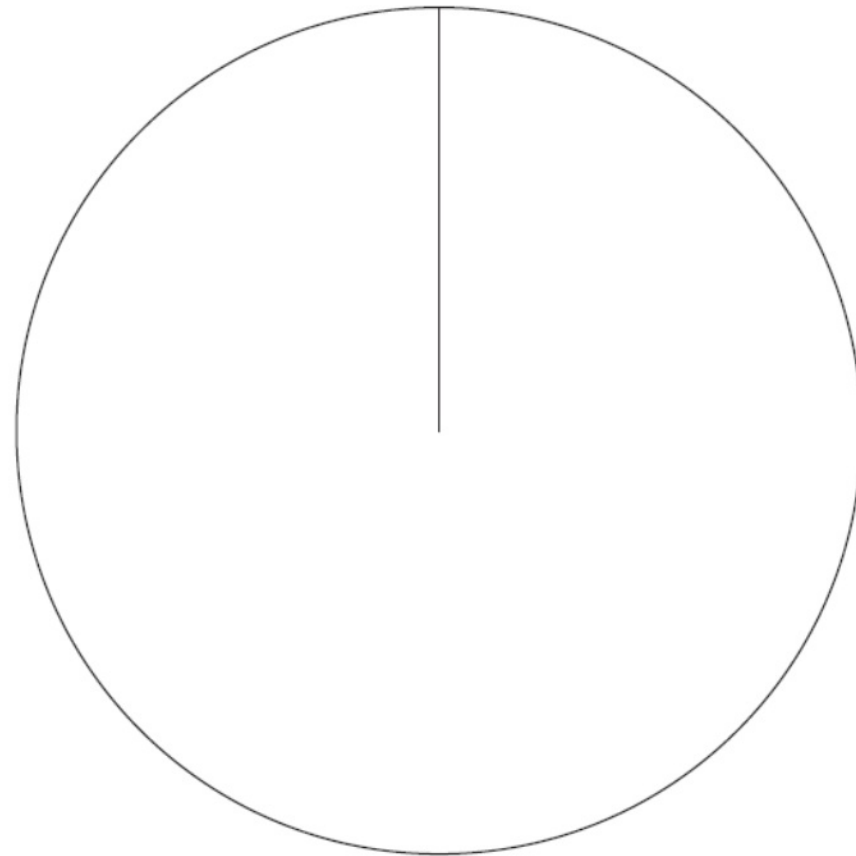
12 A group of football fans were asked what their half time snack was.

Video created by W Neill

P10 The table below gives information about their answers.

Snack	Number of fans
burger	11
pie	17
hot dog	8

Draw an accurate pie chart for this information.



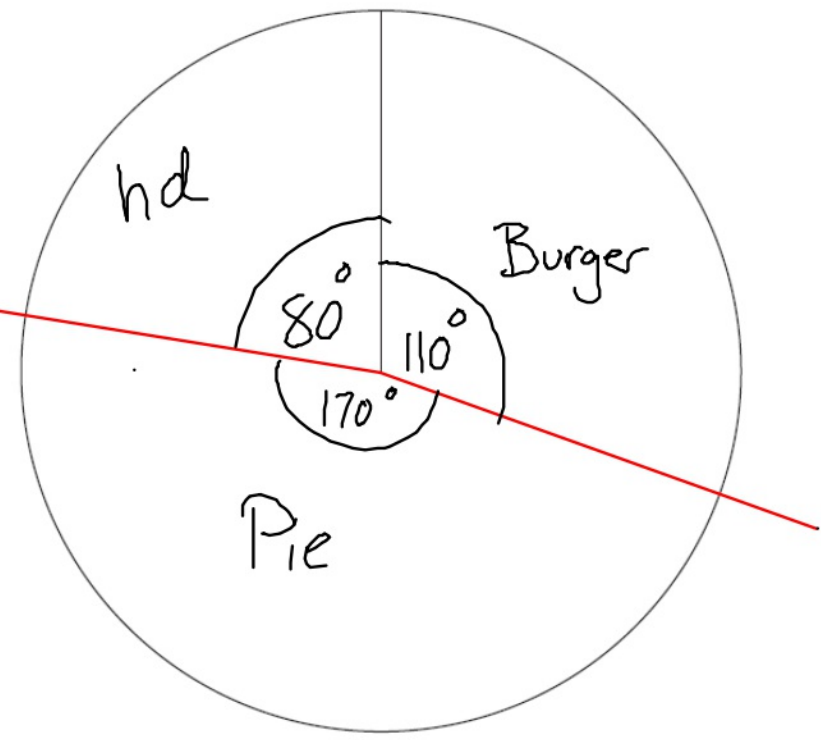
12 A group of football fans were asked what their half time snack was.

Video created by W Neill

P10 The table below gives information about their answers.

Snack	Number of fans	Angle
burger	11	110°
pie	17	170°
hot dog	8	80°

~~36~~ $\xrightarrow{\times 10}$ ~~360~~



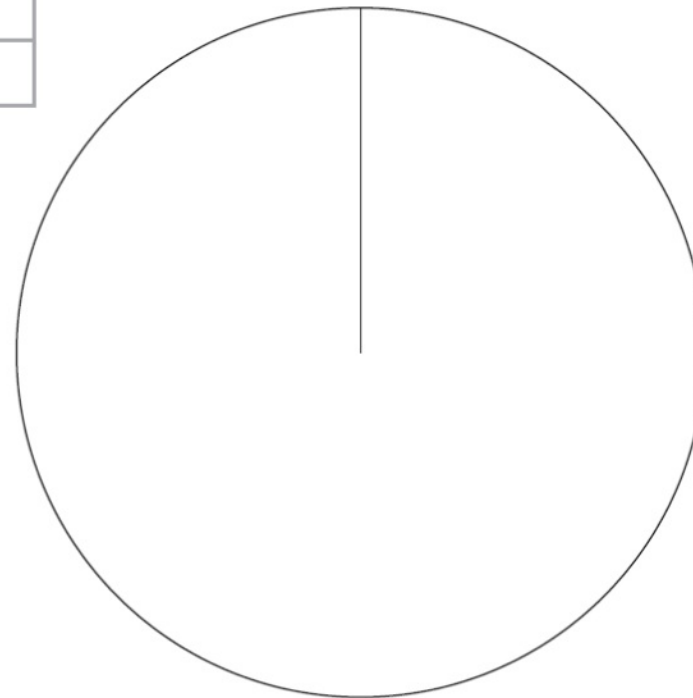
Draw an accurate pie chart for this information.

12 Joan asked each of 60 people to name their favourite vegetable.

P10 Here are her results.

Vegetable	Frequency
Peas	24
Carrots	16
Mushrooms	20

Draw an accurate pie chart for her results.



(Total for Question 12 is 3 marks)

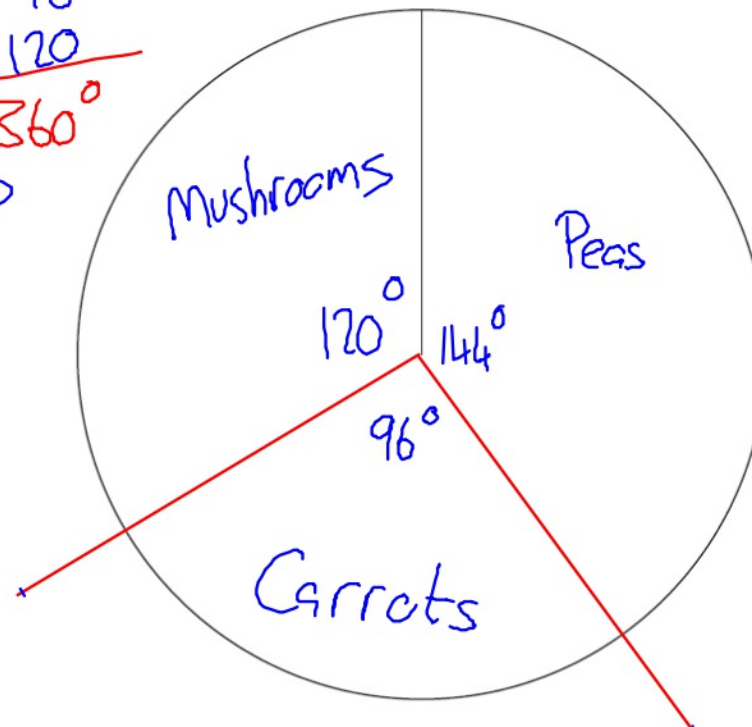
12 Joan asked each of 60 people to name their favourite vegetable.

P10 Here are her results.

Vegetable	Frequency	Angle
Peas	24 $\times 6$	144
Carrots	16 $\times 6$	96
Mushrooms	20 $\times 6$	120

$\frac{60}{360^\circ}$

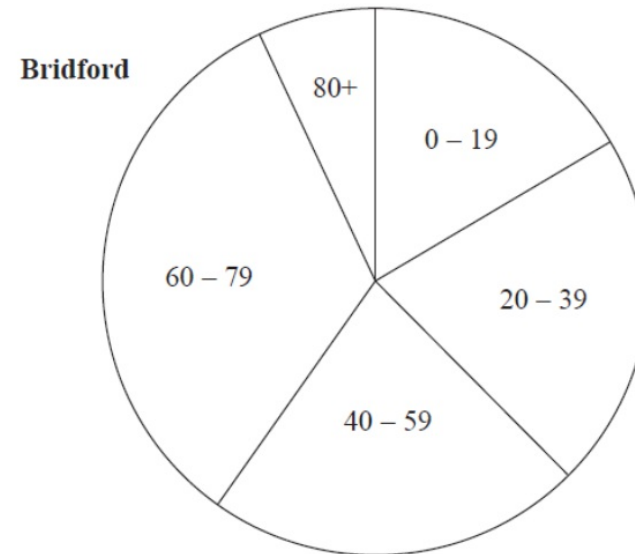
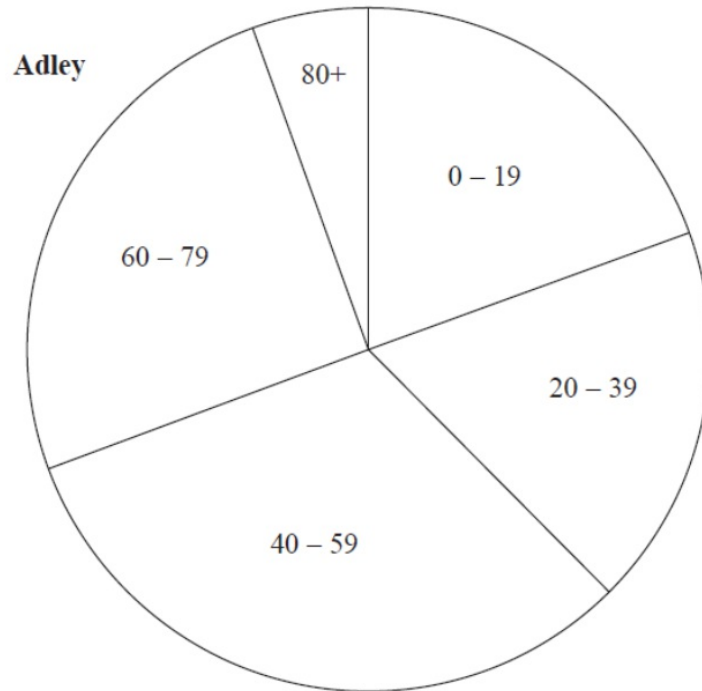
Draw an accurate pie chart for her results.



(Total for Question 12 is 3 marks)

Created by W Neill

- 11 The pie charts give information about the ages, in years, of people living in two towns, Adley and Bridford.



Diagrams accurately drawn

The ratio of the number of people living in Adley to the number of people living in Bridford is given by the ratio of the areas of the pie charts.

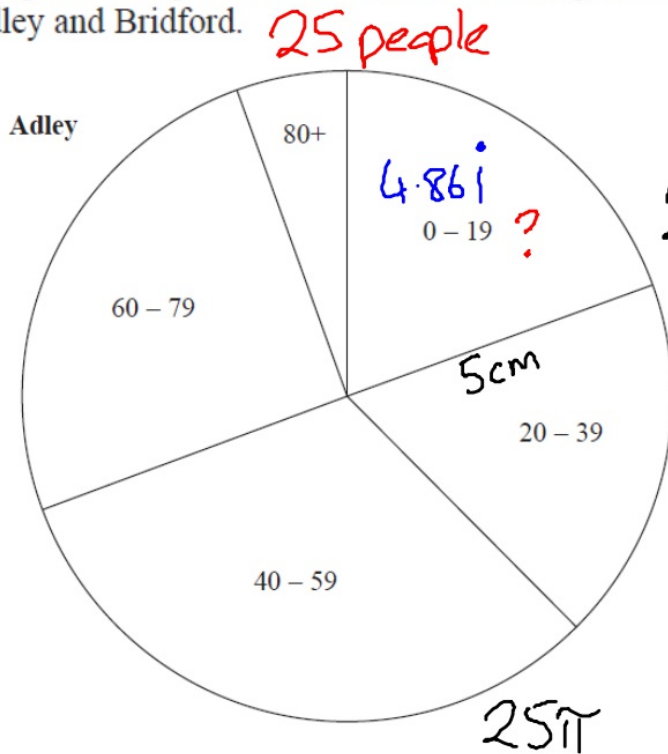
What proportion of the total number of people living in these two towns live in Adley **and** are aged 0 – 19?

Give your answer correct to 3 significant figures.

.....

(Total for Question 11 is 3 marks)

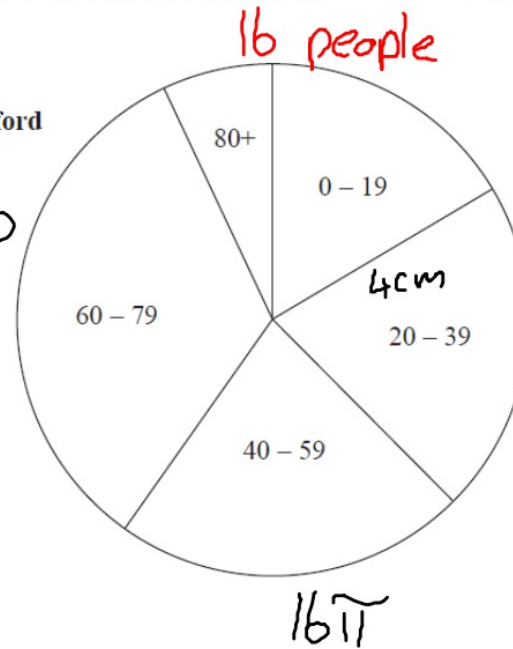
11 The pie charts give information about the ages, in years, of people living in two towns, Adley and Bridford. Created by W Neill



25 : 16

41

Area
 $R^2 \times \pi$



Diagrams accurately drawn

The ratio of the number of people living in Adley to the number of people living in Bridford is given by the ratio of the areas of the pie charts.

What proportion of the total number of people living in these two towns live in Adley and are aged 0 – 19?
Give your answer correct to 3 significant figures.

Adley $\frac{70^\circ}{360}$ of 25 people

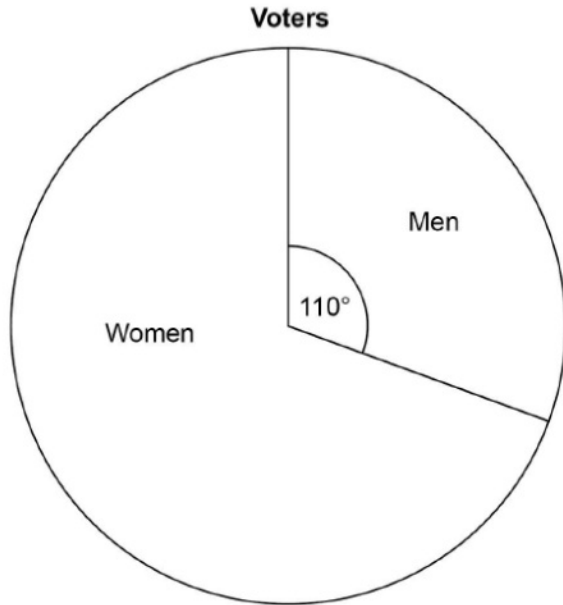
Ans $\frac{4.861}{41} = 11.85636\%$

(Total for Question 11 is 3 marks)

AQA

24 The pie chart shows information about voters in an election.

P11
R26



3360 **more** women voted than men.

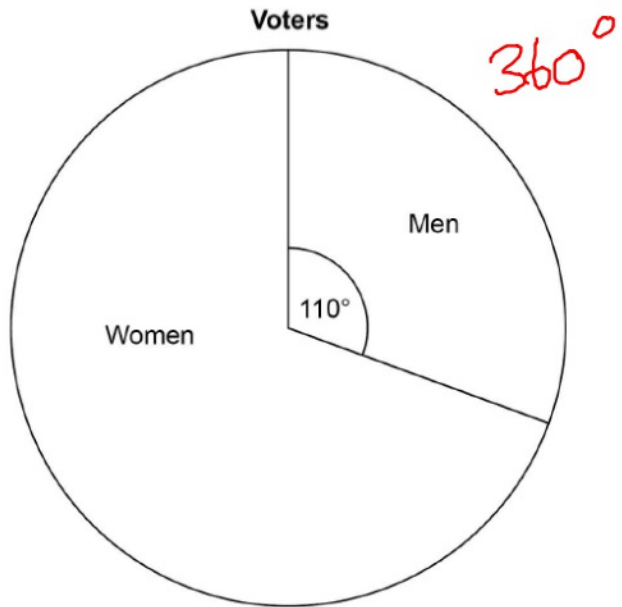
Work out the total number of voters.

[3 marks]

Answer _____

The pie chart shows information about voters in an election.

P11
R26



$$\text{Men} = 110^\circ$$
$$\text{Women} = 250^\circ$$

$$\text{More} \Rightarrow 140^\circ = 3360 \text{ votes}$$
$$\div 14 \rightarrow 10^\circ =$$
$$\times 36 \rightarrow 360^\circ = 8640$$

3360 **more** women voted than men.

Work out the total number of voters.

[3 marks]

Answer

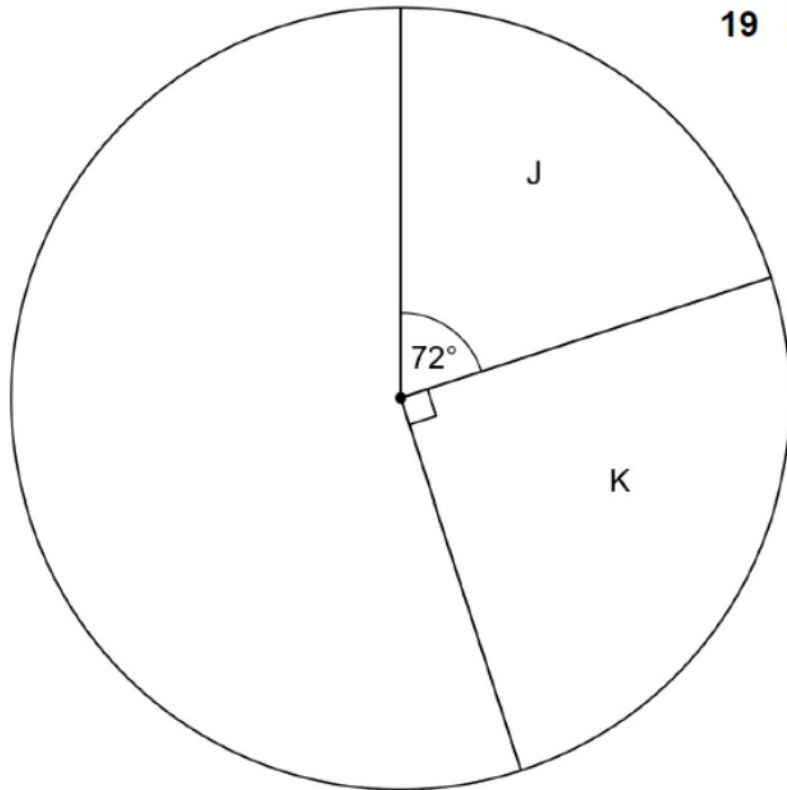
8640 ✓

19 In an election there were four candidates, J, K, L and M.

P10 Fran is drawing a pie chart to show the results.

P11 The sectors for J and K have been drawn.

Votes



19 (a) Twice as many people voted for L as voted for M.

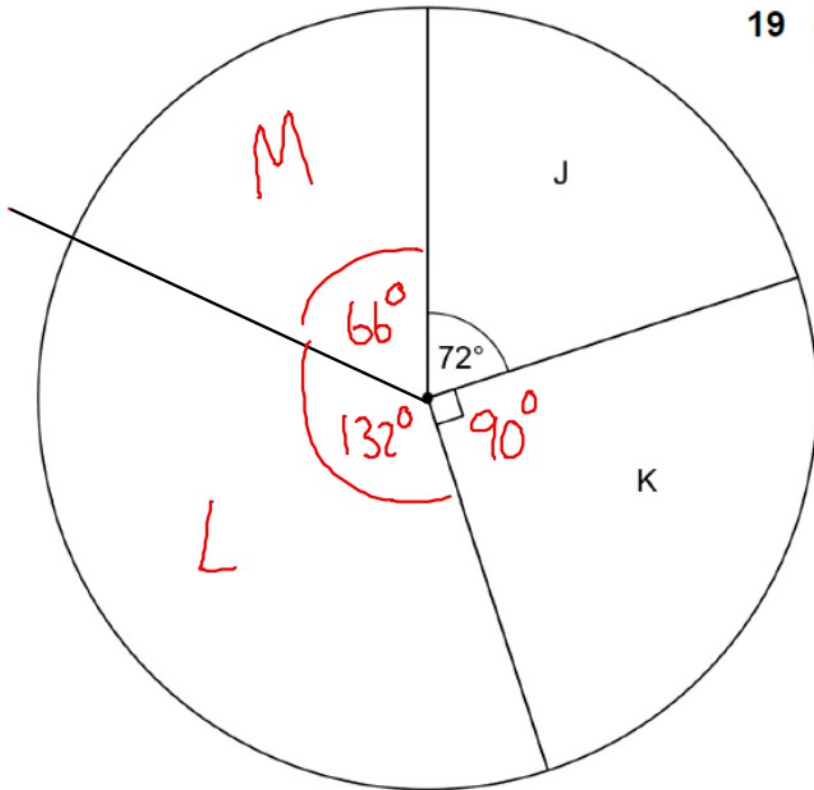
Complete the pie chart. **[3 marks]**

19 In an election there were four candidates, J, K, L and M.

P10 Fran is drawing a pie chart to show the results.

P11 The sectors for J and K have been drawn.

Votes



19 (a) Twice as many people voted for L as voted for M.

Complete the pie chart. [3 marks]

$$360 - 72 - 90 = 198^\circ$$

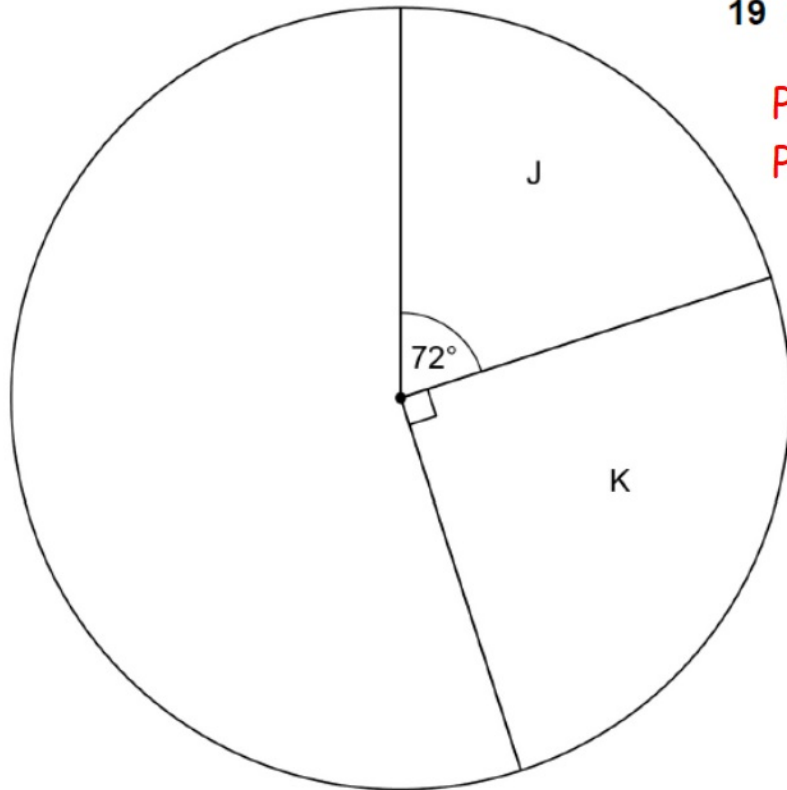
$$\begin{array}{l} L : M \quad L : M \\ 2 : 1 \quad 2x : x \\ 132^\circ \quad 66^\circ \\ 3x = 198 \\ x = 66 \end{array}$$

19 In an election there were four candidates, J, K, L and M.

Fran is drawing a pie chart to show the results.

The sectors for J and K have been drawn.

Votes



19 (b) Altogether, 16 200 people voted.

P10 How many voted for J? [2 marks]

P11

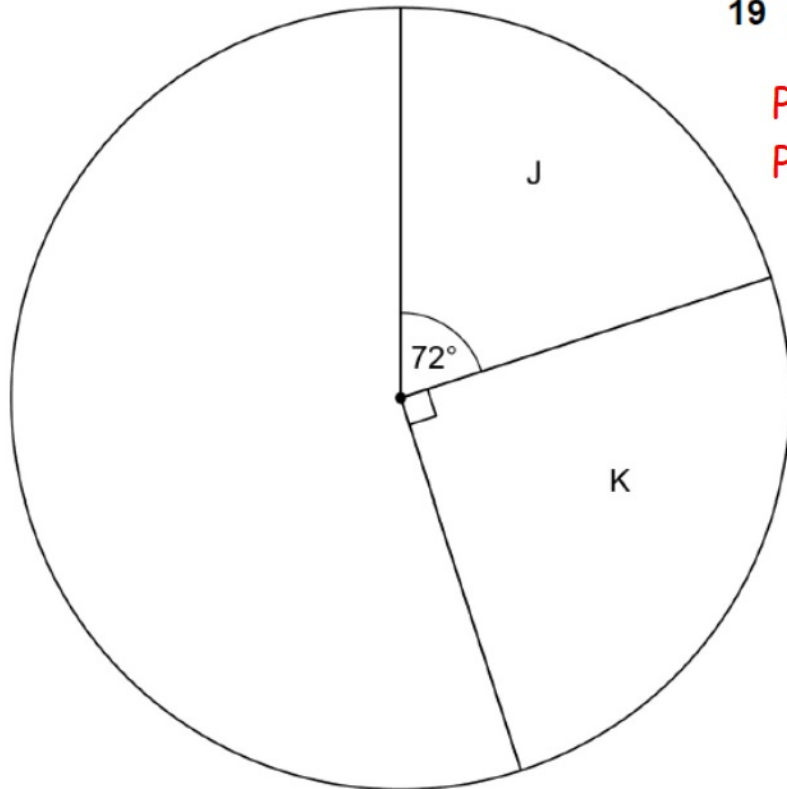
Answer _____

19 In an election there were four candidates, J, K, L and M.

Fran is drawing a pie chart to show the results.

The sectors for J and K have been drawn.

Votes



19 (b) Altogether, 16 200 people voted.

P10 How many voted for J? [2 marks]

P11

$$\begin{aligned} 16200 &= 360^\circ \\ 3240 &= 72^\circ \end{aligned}$$

(Handwritten notes: "÷5" with arrows pointing from the equations to the sectors J and K)

Answer 3240