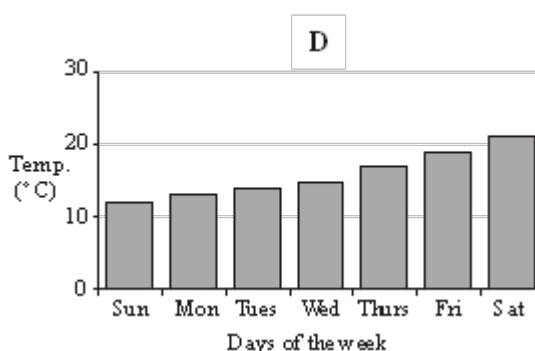
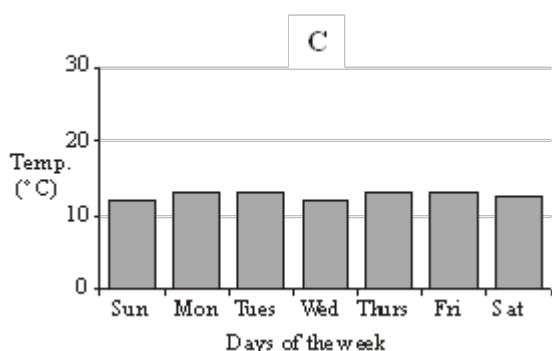
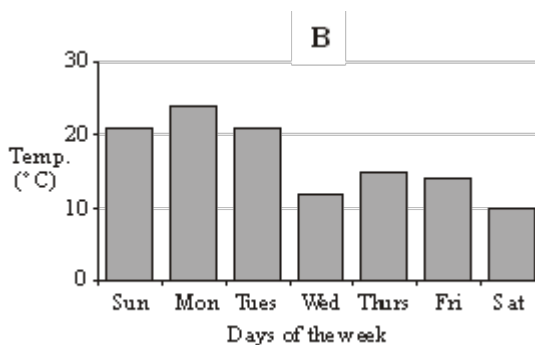
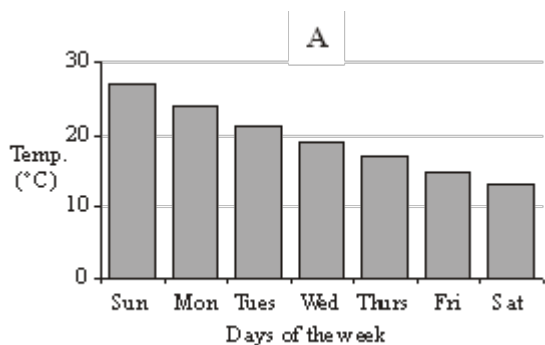


Q1. Here are four bar charts showing information about the temperatures at midday in four different cities last week.



Put a cross in the box underneath the letter of the bar chart which best matches the sentences.

One has already been done for you.

| | A | B | C | D |
|---|-------------------------------------|--------------------------|--------------------------|--------------------------|
| (i) Each temperature at midday was higher than the day before. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (ii) Each temperature at midday was about the same. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (iii) Each temperature at midday was lower than the day before. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

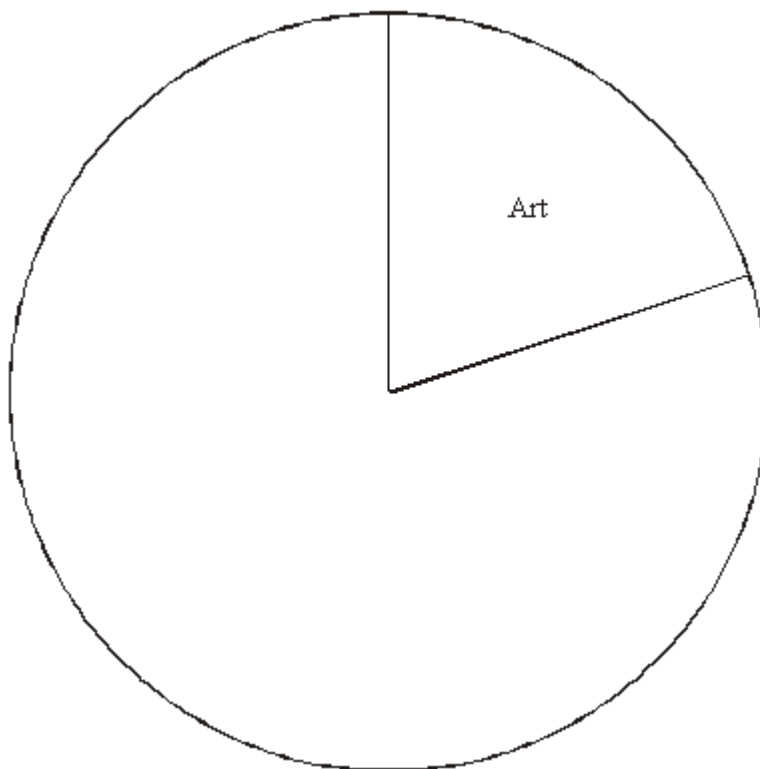
(Total 2 marks)

Q2. 60 students were asked to choose one of four subjects.

The table gives information about their choices.

| Subject | Number of students | Angle |
|---------|--------------------|------------|
| Art | 12 | 72° |
| French | 10 | |
| History | 20 | |
| Music | 18 | |

Complete the pie chart to show this information.

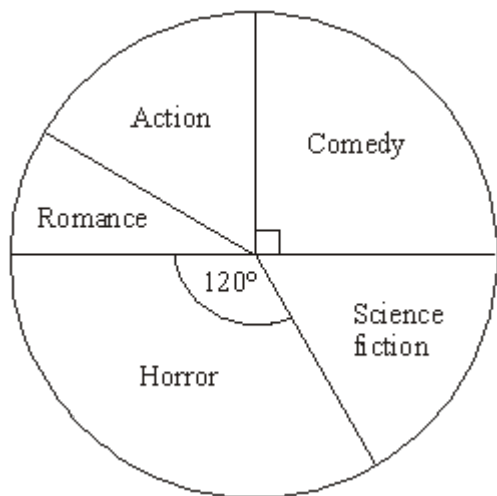


(Total 3 marks)

Q3. Colin carried out a survey.

He asked some students in Year 10 which type of film they liked best.

He used the results to draw this pie chart.



(a) What fraction of the students said "Comedy"?

.....

(1)

20 students said "Horror".

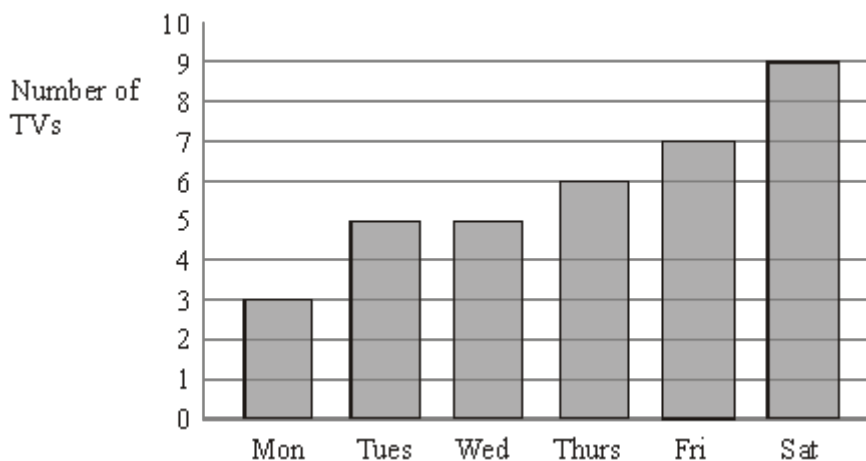
(b) Work out the total number of students Colin asked.

.....

(2)

(Total 3 marks)

Q4. The bar chart shows the number of TVs sold by a shop six days last week.



(a) How many TVs were sold on Friday?

.....

(1)

(b) On which day was the **least** number of TVs sold?

.....

(1)

(c) On which two days were the same number of TVs sold?

..... and

(1)

(Total 3 marks)

Q5. Michael carried out a survey of some students. He asked them the type of TV programme they liked best.

The accurate pie chart shows some of this information.



Michael chooses one of the students at random.

- (a) (i) Find the probability that this student likes Soaps best.

.....

- (ii) Find the probability that this student does **not** like Soaps best.

.....

(2)

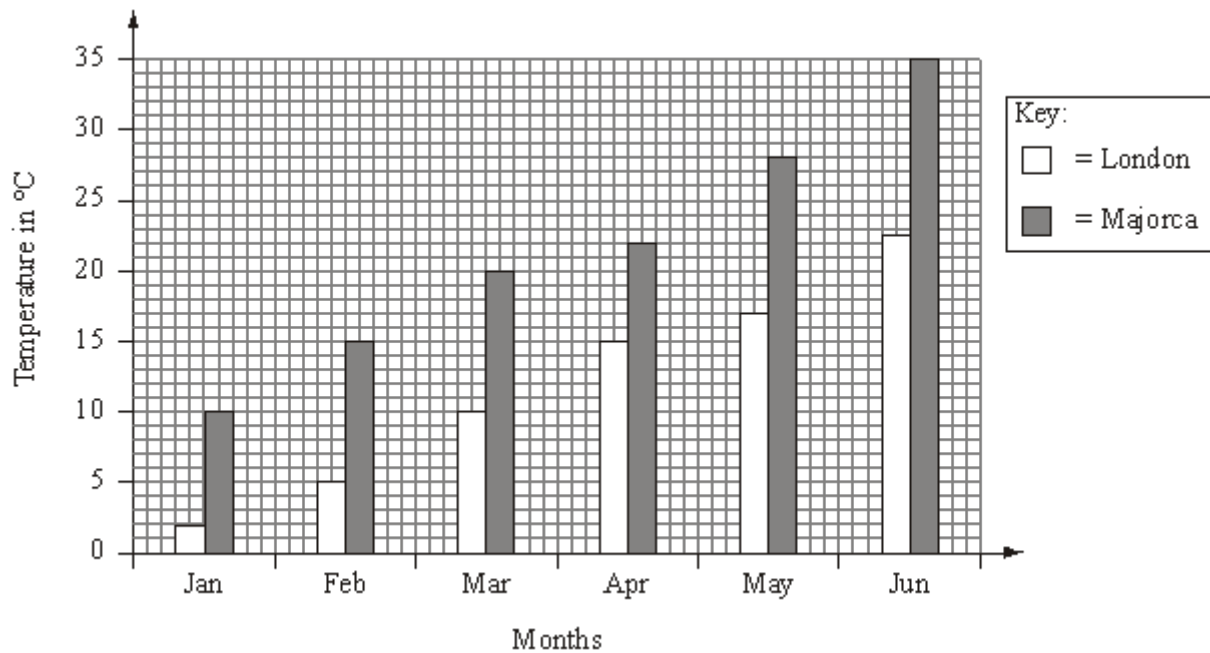
6 students said they liked the News best.

- (b) How many students took part in the survey?

.....

(2)
(Total 4 marks)

Q6. The dual bar chart shows the average monthly temperatures in London and Majorca from January to June one year.



(a) Write down the highest average monthly temperature in Majorca.

..... °C

(1)

(b) Using this dual bar chart, write down **two** facts about the average monthly temperatures in London and Majorca.

1

2

(2)

(Total 3 marks)

Q7. The table gives information about the number of goals scored by a football team in each match last season.

| Number of goals | Frequency |
|-----------------|-----------|
| 0 | 4 |

| | |
|---|---|
| 1 | 5 |
| 2 | 4 |
| 3 | 7 |
| 4 | 4 |

- (a) Write down the modal number of goals scored.

.....

(1)

- (b) Work out the total number of goals scored by the team last season.

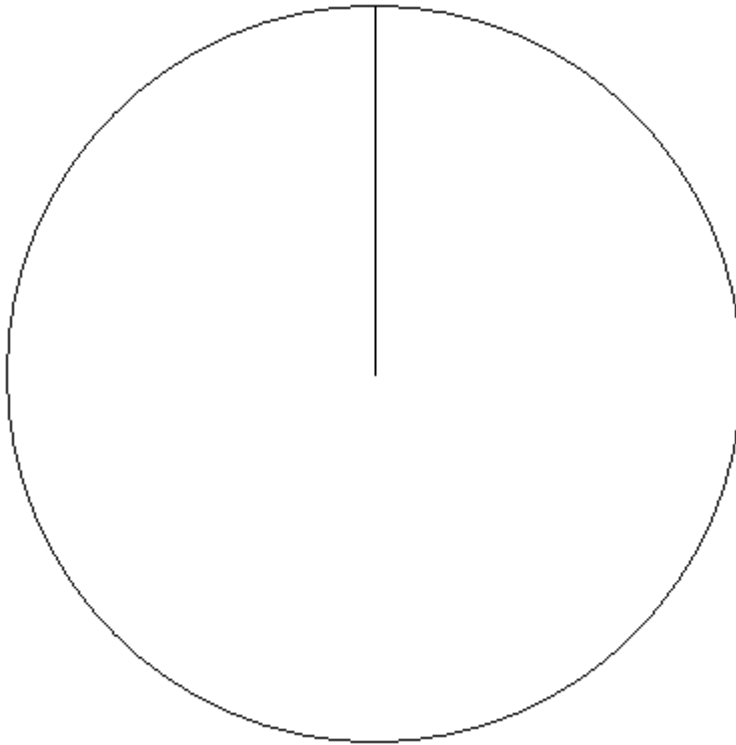
.....

(2)

The table below gives information about the results of the matches played by the football team.

| Result | Frequency |
|--------|-----------|
| Won | 10 |
| Drew | 6 |
| Lost | 8 |

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



(3)
(Total 6 marks)

- Q8.** Ouzma wants to find out the method of transport people use to travel to a shopping centre.

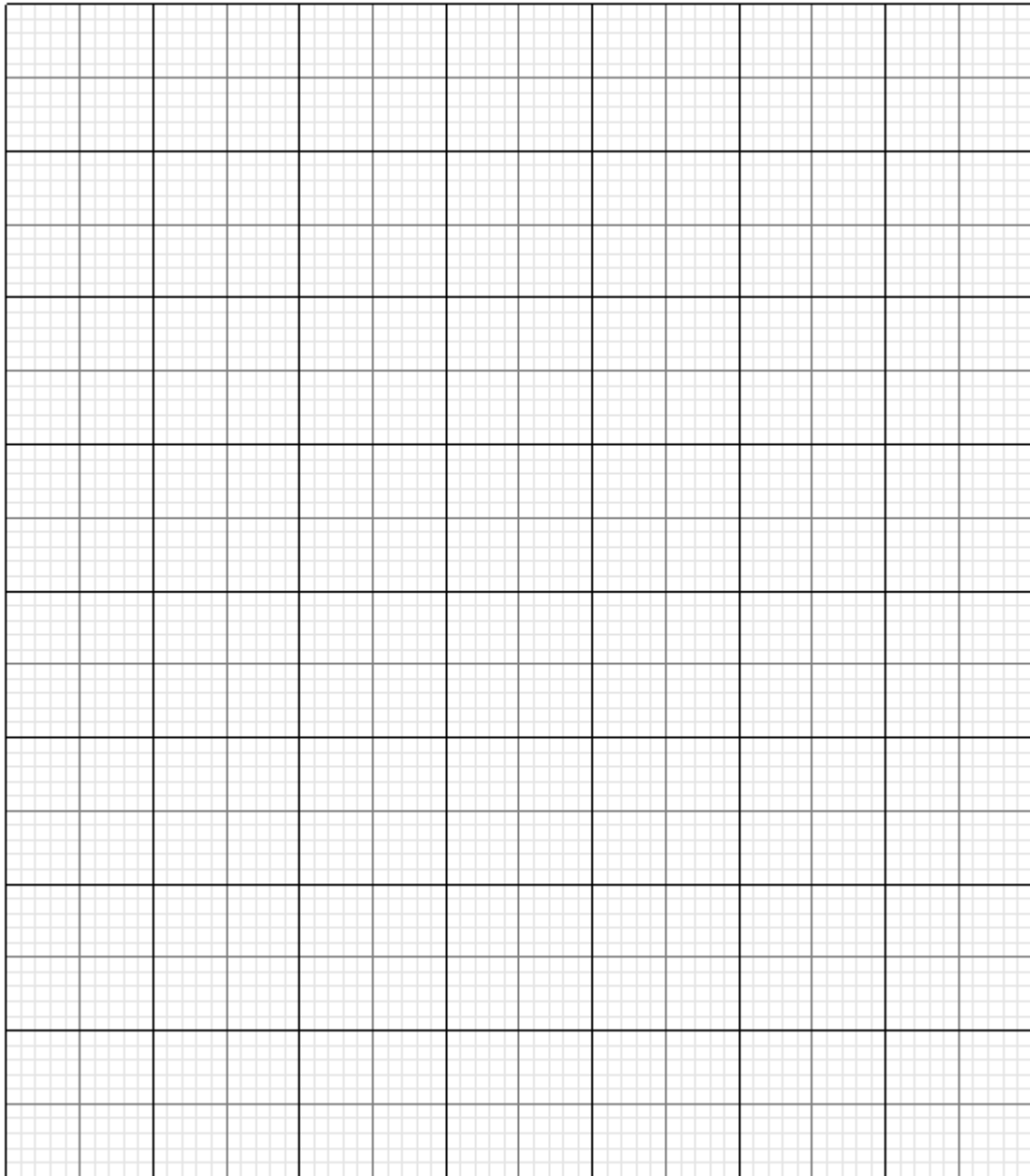
Design a suitable data collection sheet she could use to collect this information.

(Total 3 marks)

Q9. The table shows information about the number of Year 7 pupils absent from Keith's school last week.

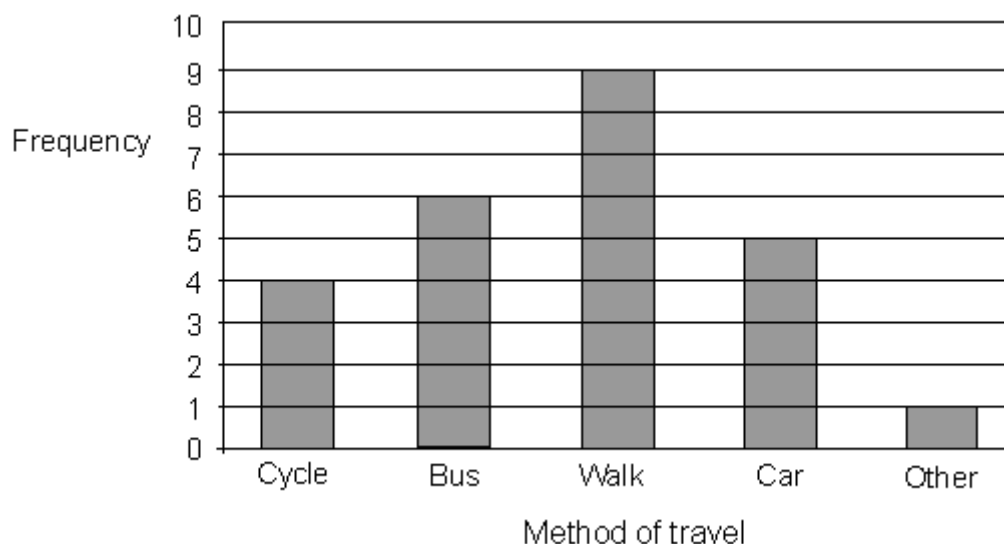
| | Monday | Tuesday | Wednesday | Thursday | Friday |
|--------------|---------------|----------------|------------------|-----------------|---------------|
| Boys | 8 | 11 | 12 | 14 | 13 |
| Girls | 10 | 9 | 12 | 13 | 11 |

Keith wants to compare this information.
On the grid, draw a suitable diagram or chart.



(Total 4 marks)

Q10. Shannon asked some students how they travelled to school. She drew this bar chart to show the results.



(a) Which method of travel was used most by the students?

.....

(1)

More students walked to school than cycled to school.

(b) How many more?

.....

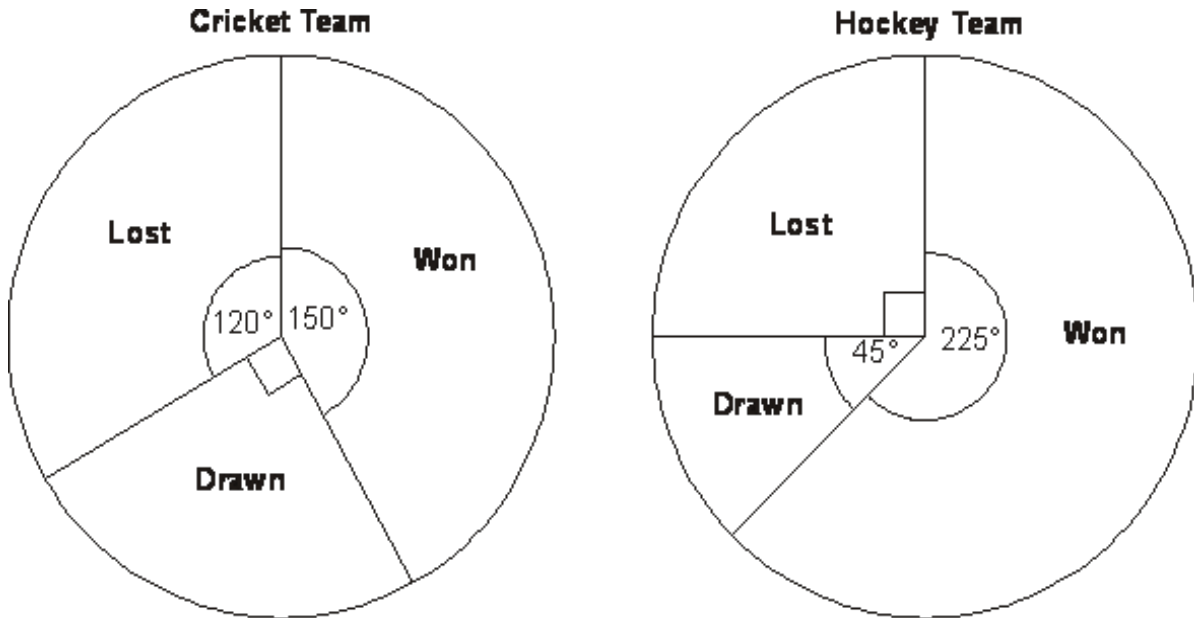
(1)

(c) Work out the number of students Shannon asked.

.....

(2)
(Total 4 marks)

Q11. The pie charts show some information about the numbers of matches won, drawn and lost by a cricket team and by a hockey team last year.



The cricket team won 15 matches.

(a) How many matches did the cricket team lose?

.....

(2)

(b) Which team won the most matches last year?
Tick (✓) **one** box to show your answer.

Cricket

Hockey

Not enough information

Explain your answer.

.....

.....

.....

.....

(1)
(Total 3 marks)

Q12. Callum watched 20 cars go onto a ferry.
He counted the number of people in each car.

Here are his results.

1 3 3 4 1 2 2 3 5 4
2 2 4 5 1 3 2 2 3 2

(a) Complete the frequency table.

| Number of people in a car | Tally | Frequency |
|---------------------------|-------|-----------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |

(2)

(b) Write down the mode.

.....

(1)

Fiona counted the number of cars going onto 6 ferries.

Here are her results.

20 18 23 17 15 21

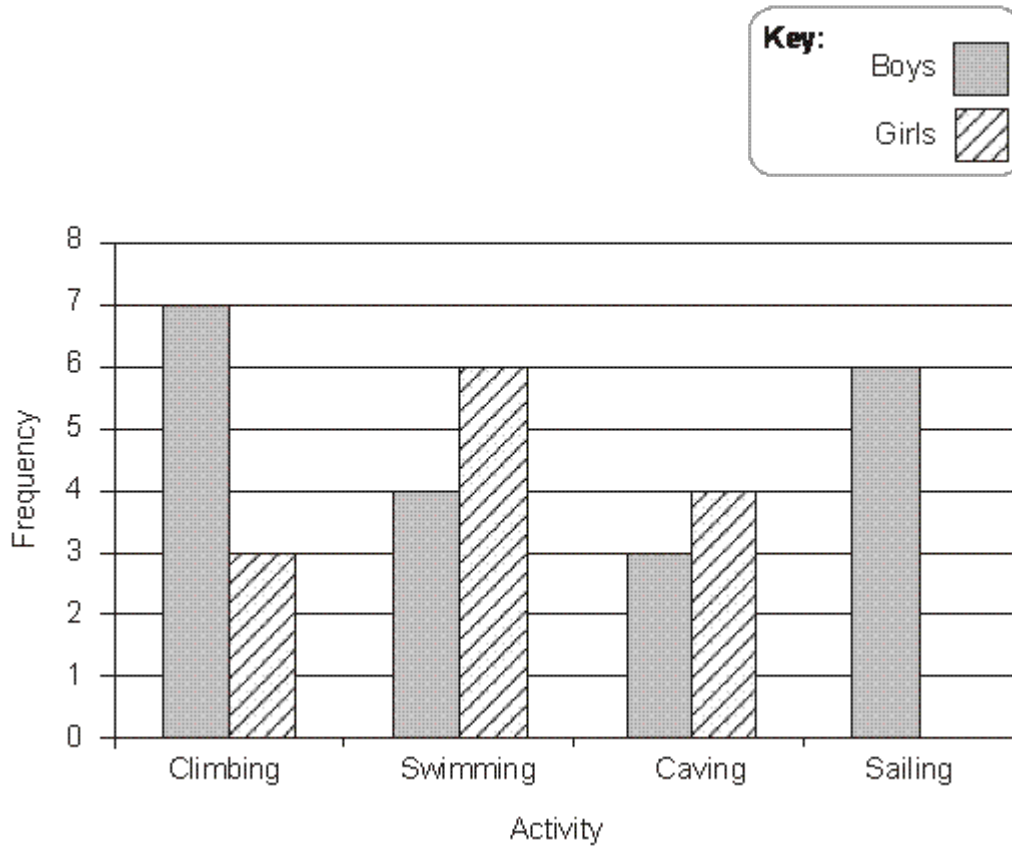
(c) Calculate the mean number of cars.

.....

(2)
(Total 5 marks)

Q13. A teacher took some students on an Outdoor Activity trip.
Each student chose one activity to do.

The bar chart shows some information about the activities chosen.



(a) Which activity did most boys choose?

.....

(1)

(b) How many boys went on the Outdoor Activity trip?

.....

(2)

7 girls went sailing.

(c) Complete the bar chart.

(1)

(Total 4 marks)

Q14. Some students did a test.
Here are their scores.

| | | | | | | | | | |
|---------------|----|----|----|----|----|----|----|----|----|
| Boys' scores | 27 | 20 | 12 | 28 | 35 | 28 | 37 | | |
| Girls' scores | 29 | 31 | 35 | 15 | 18 | 25 | 35 | 27 | 40 |

Compare fully the scores of these students.

(Total 6 marks)

Q15. The pie chart shows some information about the numbers of medals won by Canada in the 2008 Olympic Games.



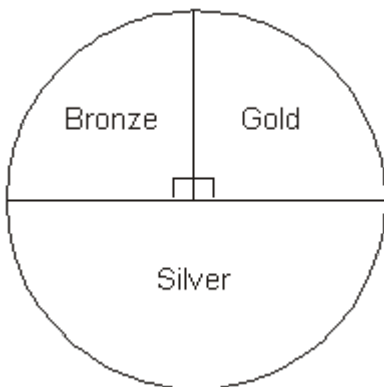
Canada won 3 gold medals.

- (a) Work out the **total** number of medals Canada won.

.....

(2)

The pie chart below shows some information about the numbers of medals won by Canada in the 2004 Olympic Games.



Maria says
 "The pie charts show that Canada won the same number of silver medals in 2008 as in 2004".

- (b) Is Maria correct? Yes No

Explain your answer.

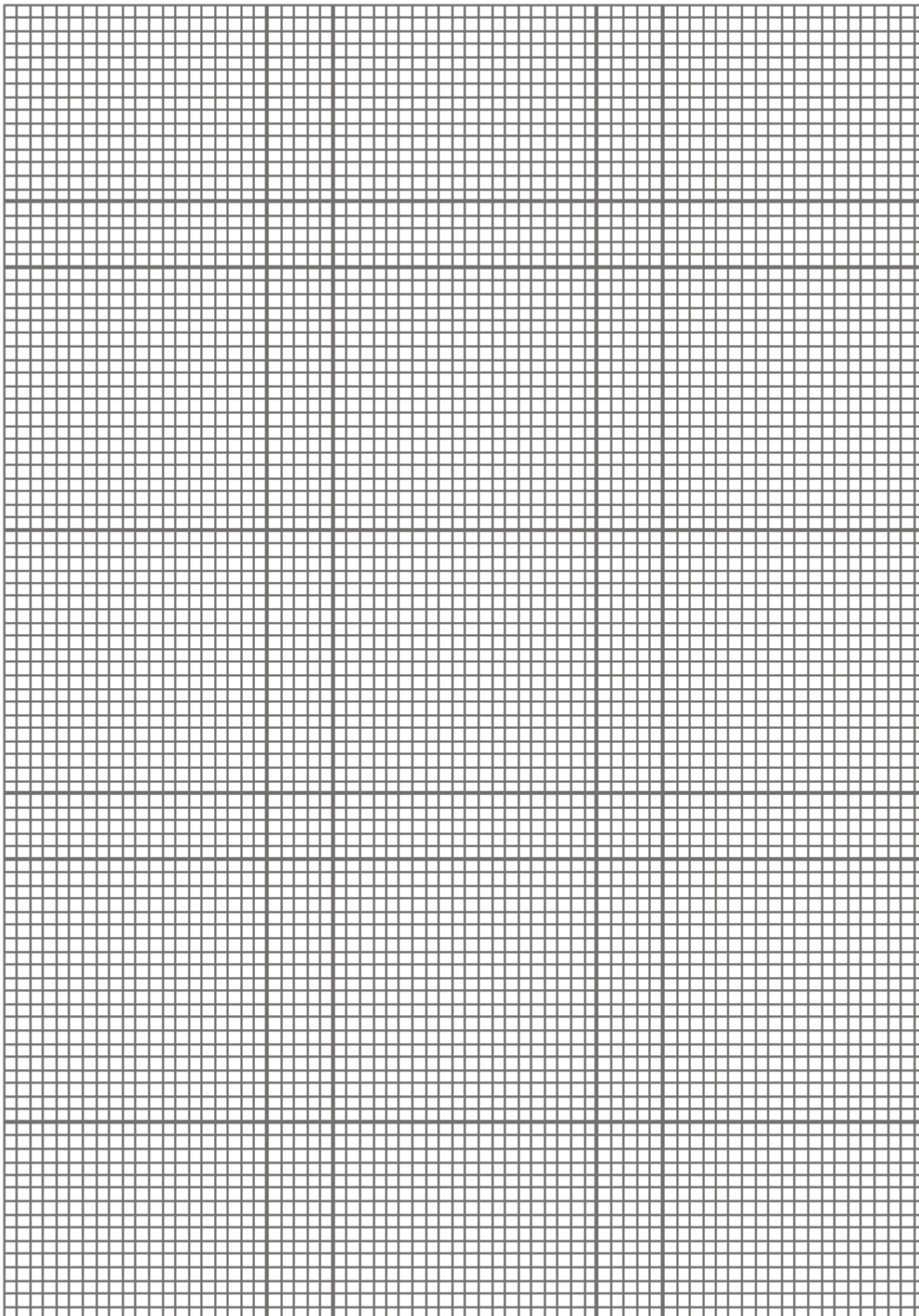
.....

.....
(1)
(Total 3 marks)

Q16. The table shows information about some students' favourite pets.

| | Cat | Dog | Rabbit | Hamster | Goldfish |
|--------------|------------|------------|---------------|----------------|-----------------|
| Boys | 6 | 12 | 4 | 10 | 5 |
| Girls | 10 | 7 | 6 | 5 | 5 |

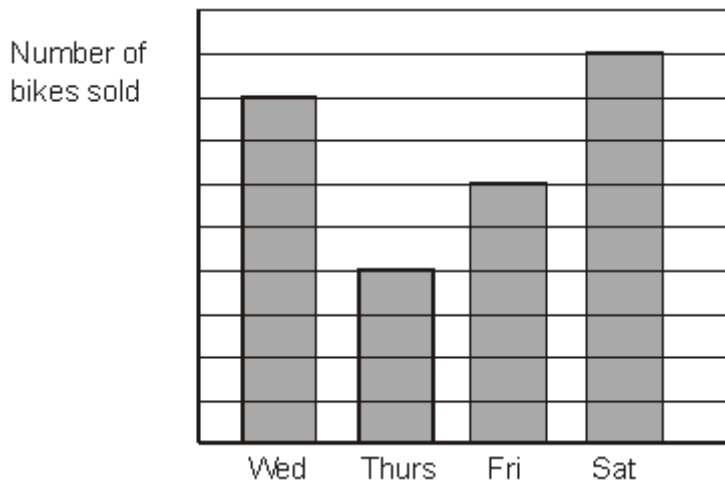
On the grid, represent this information in a suitable diagram or chart.



(Total 4 marks)

Q17. The bar chart shows the numbers of bikes a shop sold on Wednesday, Thursday,

Friday and Saturday.



Michael started to draw a pictogram to show the **same** information. He has shown the number of bikes sold on Wednesday.

Complete the pictogram.

| | |
|-----------|--|
| Wednesday | |
| Thursday | |
| Friday | |
| Saturday | |

(Total 3 marks)

Q18. Hannah carried out a survey of 20 people at a Fitness Centre. She asked them which activity they liked best.

Here are her results.

| | | | | |
|----------|--------|----------|----------|----------|
| Gym | Tennis | Squash | Swimming | Gym |
| Swimming | Gym | Tennis | Gym | Squash |
| Gym | Tennis | Squash | Tennis | Squash |
| Squash | Gym | Swimming | Gym | Swimming |

(a) Complete the table to show Hannah's results.

| Activity | Tally | Frequency |
|----------|-------|-----------|
| Gym | | |
| Tennis | | |
| Squash | | |
| Swimming | | |

(2)

(b) Write down the number of people who liked Squash the best.

.....

(1)

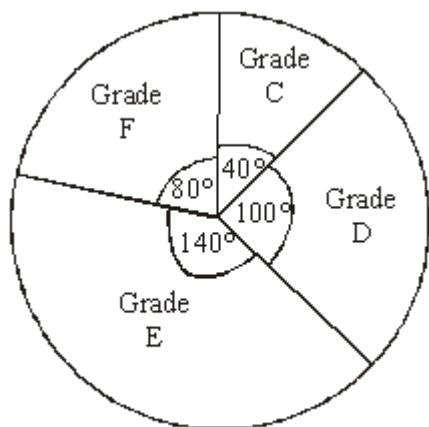
(c) Which activity was liked best by the most people?

.....

(1)

(Total 4 marks)

Q19. The pie chart gives information about the mathematics exam grades of some students.



Mathematics exam grades

Diagram **NOT** accurately drawn

(a) What grade was the mode?

.....

(1)

(b) What fraction of the students got grade D?

.....

(1)

8 of the students got grade C.

(c) (i) How many of the students got grade F?

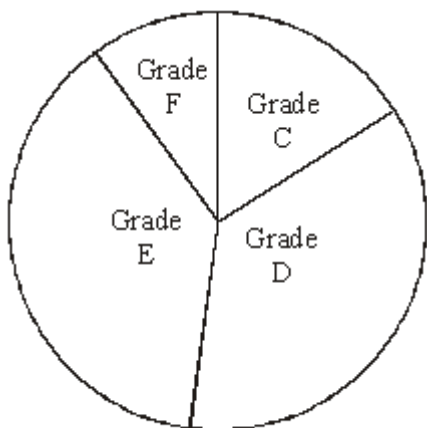
.....

(ii) How many students took the exam?

.....

(3)

This accurate pie chart gives information about the English exam grades for a different set of students.



English exam grades

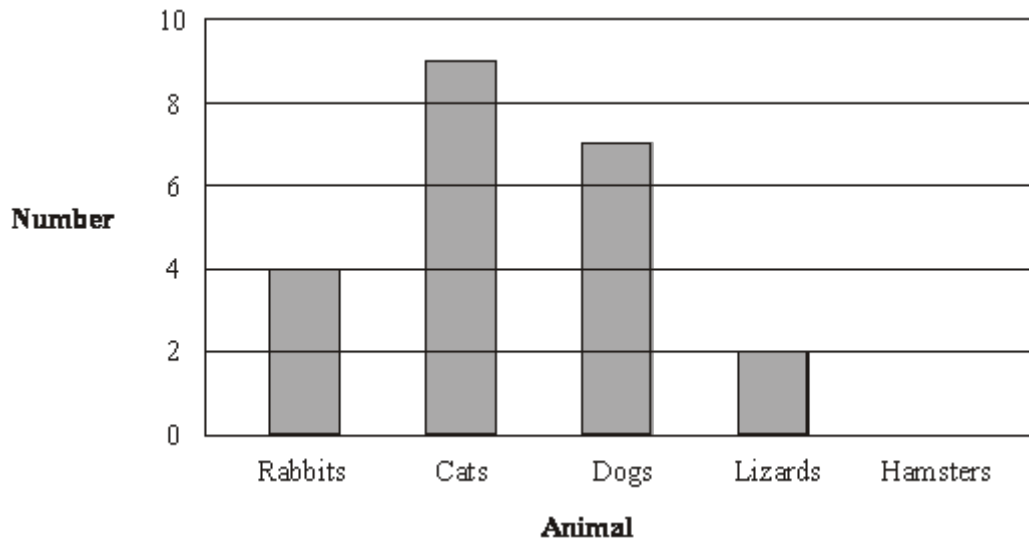
Sean says "More students got a grade D in English than in mathematics."

- (d) Sean could be **wrong**.
Explain why.

.....

(1)
(Total 6 marks)

Q20. This bar chart gives information about the numbers of rabbits, cats, dogs and lizards taken to a vet on Monday.



(a) Write down the number of rabbits taken to the vet on Monday.

.....

(1)

(b) Write down the number of dogs taken to the vet on Monday.

.....

(1)

5 hamsters were also taken to the vet on Monday.

(c) Use this information to complete the bar chart.


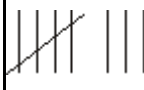
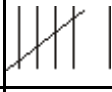

(1)

(Total 3 marks)

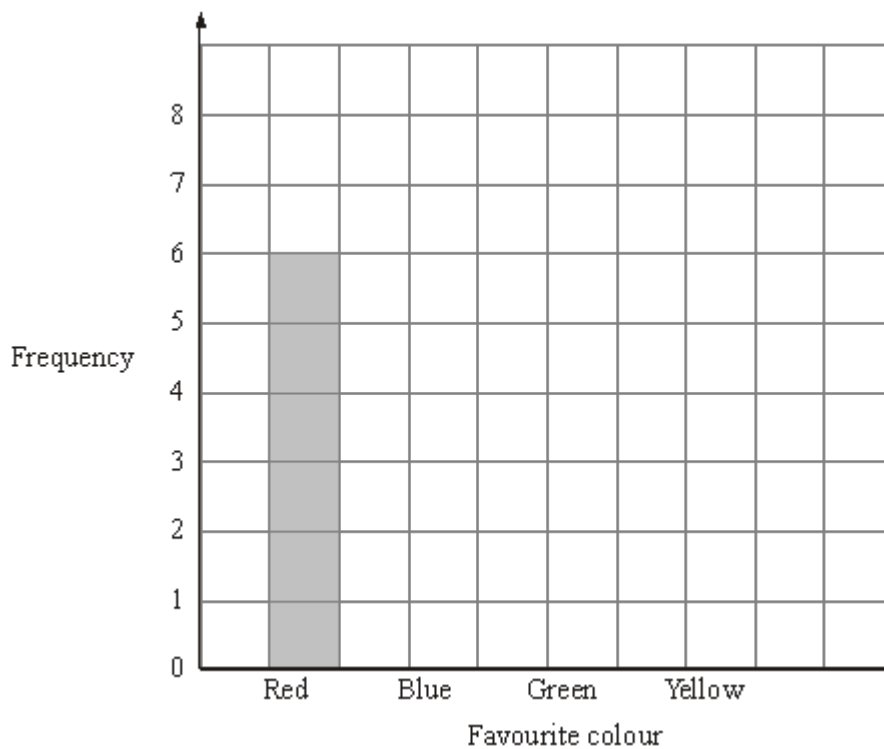
Q21. Steve asked his friends to tell him their favourite colour.

Here are his results.

| Favourite colour | Tally | Frequency |
|------------------|-------|-----------|
|------------------|-------|-----------|

| | | |
|--------|---|---|
| Red |  | 6 |
| Blue |  | 8 |
| Green |  | 5 |
| Yellow |  | 3 |

(a) Complete the bar chart to show his results.



(2)

(b) Which colour did most of his friends say?

.....

(1)
(Total 3 marks)

Q22. The table gives information about the drinks sold in a café one day.

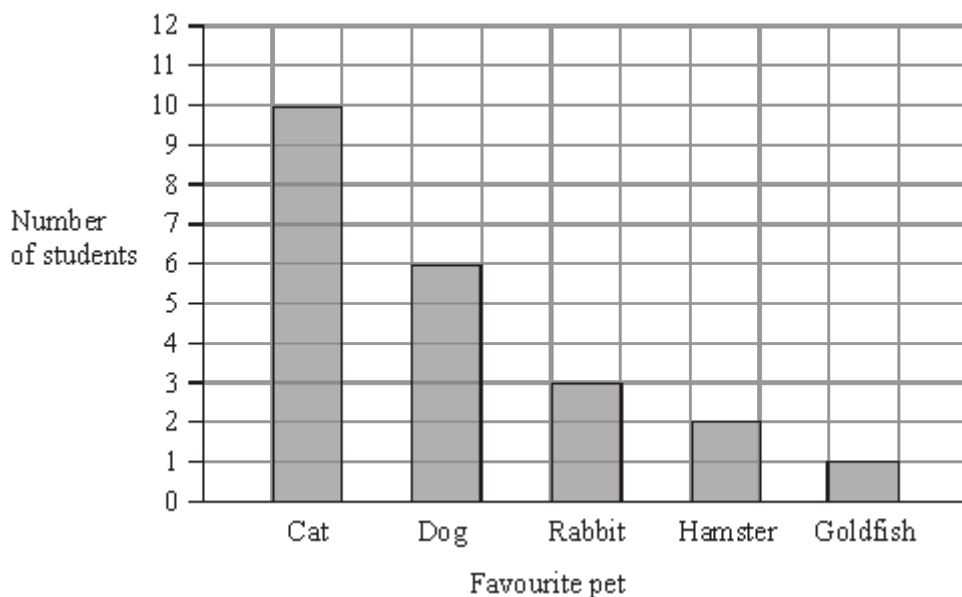
| Drink | Frequency | Size of angle |
|---------------|-----------|---------------|
| Hot chocolate | 20 | 80° |
| Soup | 15 | |
| Coffee | 25 | |
| Tea | 30 | |

Complete the pie chart to show this information.



(Total 3 marks)

Q23. Jessica asked some students to tell her their favourite pet. She used the information to draw this bar chart.



(a) How many students said a rabbit?

.....

(1)

(b) Which pet did most students say?

.....

(1)

(c) Work out the number of students that Jessica asked.

.....

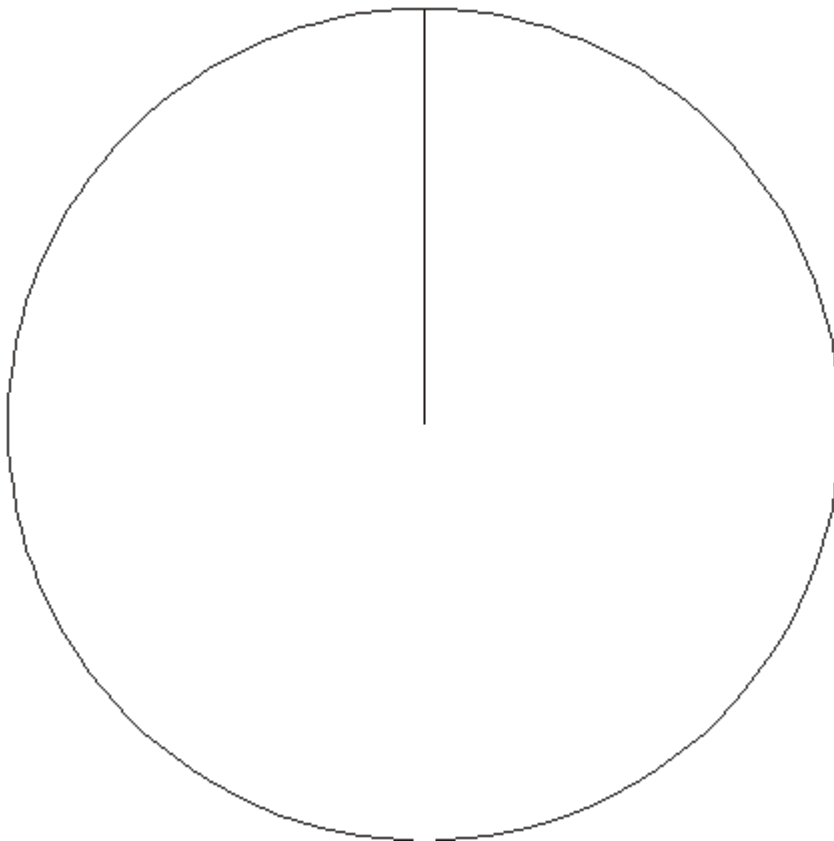
(1)

(Total 3 marks)

Q24. The table gives information about the numbers of fish in a lake.

| Fish | Frequency | |
|-------|-----------|--|
| Perch | 10 | |
| Bream | 23 | |
| Carp | 39 | |

Draw an accurate pie chart to show this information.



(Total 4 marks)

Q25. Sarah works in a post office.
She recorded the number of parcels posted on each of 16 days.

Here are her results.

2 2 5 3 2 4 2 2
3 6 4 6 2 2 3 3

(a) Complete the frequency table to show Sarah's results.

| Number of parcels | Tally | Frequency |
|-------------------|-------|-----------|
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |

(2)

(b) Write down the mode.

.....

(1)

(c) Work out the range.

.....

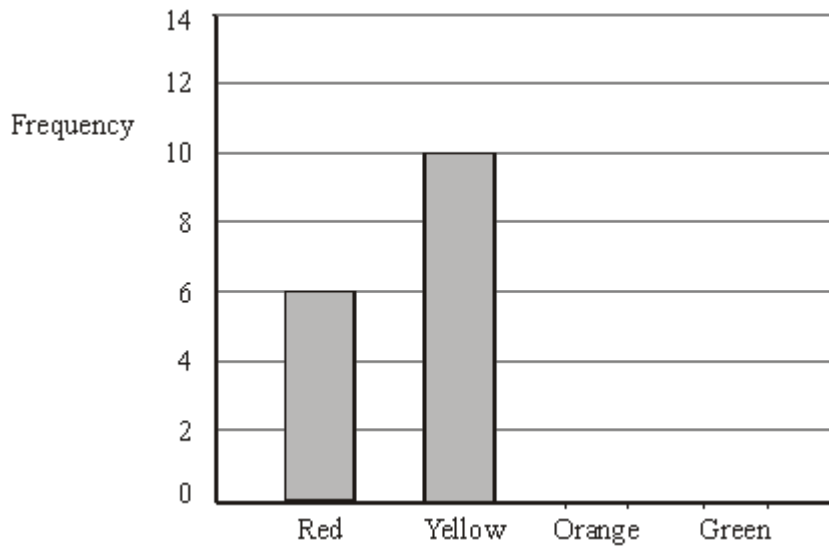
(2)

(Total 5 marks)

Q26. There are only red, yellow, orange and green sweets in a bag.

Peter recorded the colour of each sweet in the bag.

The bar chart shows some information about his results.



8 sweets were orange.
5 sweets were green.

(a) Complete the bar chart.

(2)

(b) Write down the number of red sweets.

.....

(1)

(c) What colour sweet is the mode?

.....

(1)

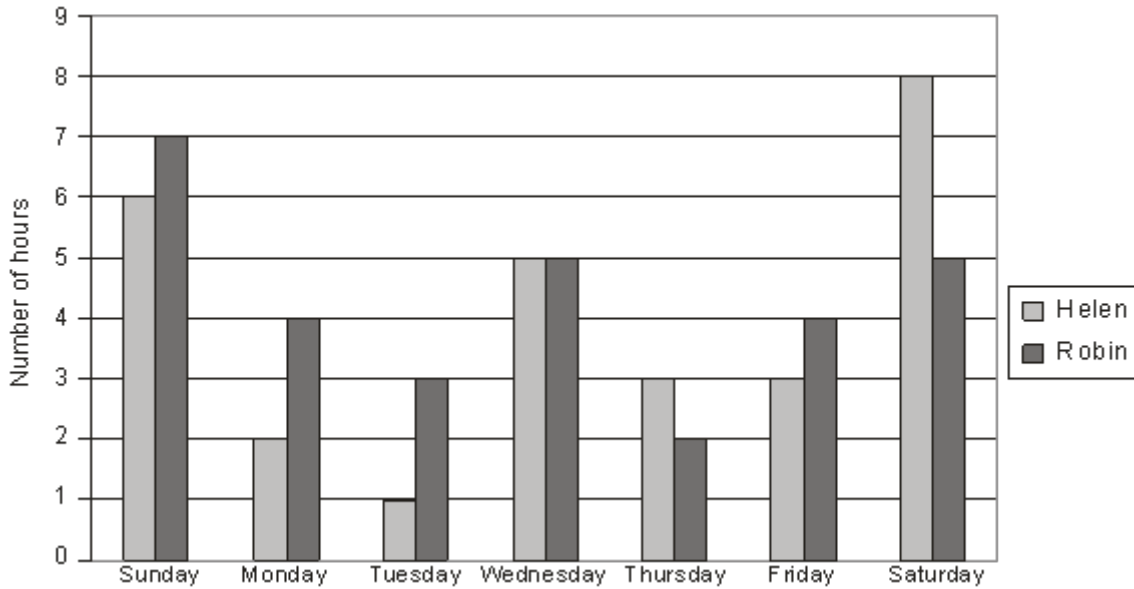
(d) Work out the total number of sweets in the bag.

.....

(1)

(Total 5 marks)

Q27. Here is a dual bar chart showing the number of hours of TV that Helen and Robin watched each day last week.



(a) Write down the number of hours of TV that Helen watched on Monday.

..... hours

(1)

(b) How many more hours of TV did Robin watch than Helen watch last week?

.....

(2)

(c) Find the median of the number of hours Robin watched TV last week.

.....

(2)

(d) On Saturday and Sunday Helen watched 7 programmes altogether.

Work out the average length of the programmes that she watched.

.....
 (2)
 (Total 7 marks)

Q28. Laura and Jaz were worried about the amount of traffic in their town.

The town council aims to reduce the percentage of lorries to 25% of the total number of vehicles.

Laura and Jaz carried out a survey of the types of vehicles passing Laura's house during 10 minutes one Saturday morning.

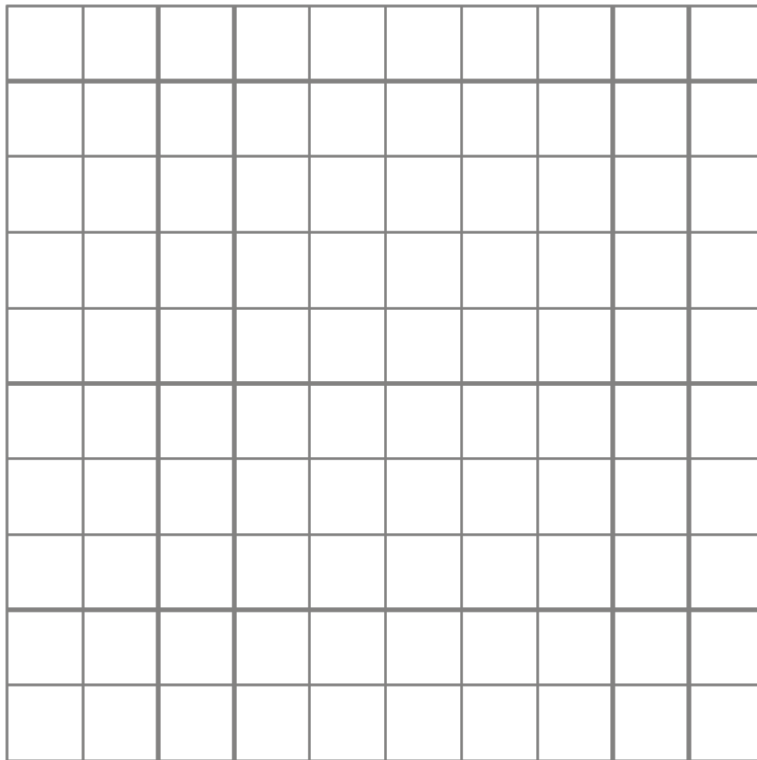
Here is a list of the vehicles they saw.

| | | | | | |
|-----------|-----------|-------|-----------|-----------|-----------|
| Car | Van | Lorry | Motorbike | Bus | Car |
| Van | Car | Car | Van | Lorry | Motorbike |
| Motorbike | Motorbike | Van | Lorry | Motorbike | Car |
| Car | Bus | Lorry | Car | Lorry | Motorbike |

Laura and Jaz were going to give a talk about the results of their survey.

- (a) Design a suitable chart or table Laura could use and a different chart or table that Jaz could use to make a summary of the list of vehicles they saw.

Use the space below or the grid provided.



(6)

The council's aim was to reduce the percentage of lorries in the town to be less than 25%.

(b) Did the council succeed? You must explain your answer.

.....
.....

(2)

Laura and Jaz's survey was not a good one.

(c) Explain how Laura and Jaz could design a better survey to investigate the council's plan.

.....
.....

(2)

(Total 10 marks)

M1.

| | Answer | Mark | Additional Guidance |
|------------------------------------|--------|------|-----------------------------------|
| (i) | C | 2 | B1 for each correct answer |
| (ii) | A | | |
| Total for Question: 2 marks | | | |

M2.

| Answer | Mark | Additional Guidance |
|---|------|--|
| Overlay of pie chart –angles of 60°, 120°, 108° | 3 | B3 for fully correct labelled pie chart within guidelines (B2 for pie chart with correct angles within guidelines and no labels or for one angle drawn correctly within guidelines and labelled) (B1 for 1 angle drawn in guidelines and not labelled or for 1 correct angle in table or sight of $360 \div 60$ or $72 \div 12$ or 6) |
| Total for Question: 3 marks | | |

M3.

| | Working | Answer | Mark | Additional Guidance |
|--|---------|--------|------|---------------------|
|--|---------|--------|------|---------------------|

| | | | | |
|------------------------------------|---------------|---------------|---|--|
| (a) | | $\frac{1}{4}$ | 1 | B1 for $\frac{1}{4}$ or equivalent fraction |
| (b) | 20×3 | 60 | 2 | M1 for $360 \div 120$ or 3 seen or $360 \div (120 \div 20)$ or three of 20, 10, 10, 15, 5 seen either on the diagram or seen in a sum of 4 or 5 numbers A1 ca |
| Total for Question: 3 marks | | | | |

M4.

| | Answer | Mark | Additional Guidance |
|------------------------------------|-----------------------|------|--|
| (a) | 7 | 1 | B1 cao |
| (b) | Monday | 1 | B1 cao accept abbreviations |
| (c) | Tuesday and Wednesday | 1 | B1 cao accept abbreviations (not T) |
| Total for Question: 3 marks | | | |

M5.

| | Working | Answer | Mark | Additional Guidance |
|--------|---------|---------------------|------|--|
| (a)(i) | | $\frac{90}{360}$ oe | 1 | B1 for $\frac{90}{360}$ oe (accept 25% or 0.25 or $\frac{1}{4}$) Condone any incorrect cancelling if correct answer is seen Do not accept 1:4 or 4:1 or 1 out of 4 or 3 in 4 etc |

| | | | | |
|------------------------------------|--------------------------|----------------------|---|---|
| (ii) | | $\frac{270}{360}$ oe | 1 | $\frac{270}{360}$ B1 for $\frac{270}{360}$ oe (accept 75% or 0.75 or $\frac{3}{4}$) Condone any incorrect cancelling if correct answer is seen Do not accept 3:4 or 4:3 or 3 out of 4 or 3 in 4 etc SC: B1 for 1 – (a)(i) SC: B0 in (i) and B1 in (ii) for correct answers but consistent writing of probabilities incorrectly in BOTH parts (a)(i) and (a)(ii) e.g. 1 out of 4 and 3 out of 4 |
| (b) | $(360 \div 30) \times 6$ | 72 | 2 | M1 for $360 \div 30$ o.e. e.g. 30° is a twelfth or $6 \div 30$ or $30 \div 6$ or 1 person is 5° o.e. or sight of 12×6 or $360 \div 5$ or attempt add 5 frequencies 3 of which are correct or any partial equivalent method A1 cao |
| Total for Question: 4 marks | | | | |

M6.

| | Answer | Mark | Additional Guidance |
|------------------------------------|---|------|---|
| (a) | 35 | 1 | B1 cao |
| (b) | Warmer in Majorca Increase in temperature from Jan to Jun | 2 | B2 for two acceptable comparisons/observations B1 for one comparisons/observation] |
| Total for Question: 3 marks | | | |

M7.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|---|------------------------|------|--|
| (a) | | 3 | 1 | B1 cao |
| (b) | $0 \times 4 + 1 \times 5 + 2 \times 4 + 3 \times 7 + 4 \times 4 = 50$ | 50 | 2 | M1 for fx calculated (could be implied by at least 2 correct) A1 cao |
| (c) | $360^\circ \div 24 = 15$ Sector angles: W=150; D=90; L=120 | Angles drawn, labelled | 3 | M1 for $360 \div 24$ or 15 seen or one angle correct in pie chart ($\pm 2^\circ$), ignore all labels, or one correct angle in the table A1 for any two angles correct in pie chart. Ignore labels A1 for fully correct and labelled pie chart All angles $\pm 2^\circ$ |
| Total for Question: 6 marks | | | | |

M8.

| Answer | Mark | Additional Guidance |
|------------------------------------|------|---|
| Types Tally Frequency | 3 | B3 for correct table with all three aspects Aspect 1: 'method of travel' or for at least 3 of bus, car, walk, other etc. Aspect 2: 'tally' or tally marks or 'frequency' or 'number of people' Aspect 3: 'frequency' or frequencies or 'total' or totals or 'number of people' B2 for two aspects B1 for one aspect |
| Total for Question: 3 marks | | |

M9.

| Answer | Mark | Additional Guidance |
|------------------------------------|------|--|
| Diagram or chart | 4 | <p>B1 for a key or suitable labels to identify boys and girls The key may be ignored if unclear provided the graph is clear, ie if different colours are used to shade in the graph. Give benefit to candidate.</p> <p>B1 for 5 correct labels for days clearly in the appropriate place</p> <p>B1 for a diagram(s) or chart(s)(combined or separate) set up for comparison, showing data for at least three days e.g. dual bar chart, back-to-back stem and leaf diagrams, pie charts, pictograms, etc</p> <p>C1 fully correct diagram or chart to include all axes labeled. QWC: Fully correct diagram or chart and all labelling is correct and clear</p> |
| Total for Question: 4 marks | | |

M10.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|--------------------------|--------|------|---|
| (a) | | Walk | 1 | B1 cao |
| (b) | | 5 | 1 | B1 cao |
| (c) | $4 + 6 + 9 + 5 + 1 = 25$ | 25 | 2 | <p>M1 for adding the frequencies 4,6,9,5,1 or adding 5 frequencies allow one misread error i.e $4+6+9+6+1$</p> <p>A1 cao</p> |
| Total for Question: 4 marks | | | | |

M11.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|--|--|------|--|
| (a) | 15 matches = 150° 1 match = 10° $120 \div 10 = 12$ | 12 | 2 | M1 for $150 \div 15 (=10)$ or $120 \div 10$ [Note: 10 seen on the answer line with no working gets no marks] A1 cao |
| (b) | | Not enough information ticked and reason given | 1 | B1 for "Not enough information" ticked (or not and not contradicted) and correct explanation eg Explains that we don't know actual number of matches hockey team won. OR explains we don't know number of matches. OR explains that pie charts only show the proportions (eg. "cannot compare sizes of angles only") [B0 for any contradictory responses] |
| Total for Question: 3 marks | | | | |

M12.

| | Working | Answer | Mark | Additional Guidance |
|-----|-------------------------------|---------------|------|---|
| (a) | | 3, 7, 5, 3, 2 | 2 | M1 for at least 1 correct frequency or 1 correct tally cell A1 all frequencies correct (with or without the tally column completed or incorrectly completed) |
| (b) | | 2 | 1 | B1 for 2 or ft from (a) |
| (c) | $20 + 18 + 23 + 17 + 15 + 21$ | 19 | 2 | M1 for " $(20 + 18 + 23 + 17 + 15 + 21)$ " [$= 114$] $\div 6$ |

| | | |
|------------------------------------|--|---|
| 114 ÷ 6 | | A1 cao [SC: B1 for an answer of 96.5 if M0 scored] |
| Total for Question: 5 marks | | |

M13.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|---------------|-----------------|------|---|
| (a) | | Climbing | 1 | B1 cao |
| (b) | 7 + 4 + 3 + 6 | 20 | 2 | M1 for adding at least 2 correct readings (eg. 7 + 6, or 7 + 6 + 3; however answers alone of 13 or 16 get no marks) A1 cao |
| (c) | | Bar of height 7 | 1 | B1 for a bar of height 7, shaded or un-shaded on either side of the boys bar |
| Total for Question: 4 marks | | | | |

M14.

| | Working | Answer | Mark | Additional Guidance |
|------------|---|---|------|--|
| QWC | 12, 20, 7, 28, 28, 35, 37 15, 18, 25, 27, 29, 31, 35, 35, 40 | Compares 1.medians/ means 2.ranges | 6 | B2 for median (boys) = 28 and median (girls)= 29 OR mean (boys) = 26.7 or better and mean (girls) = 28.3 or better (B1 for one correct median/mean) B2 for range (boys) = 25 and range (girls) = 25 |

| | | | | |
|--|--|--|--|---|
| | | | | <p>(B1 for one correct range)</p> <p>OR</p> <p>B2 for fully correct diagram/chart to compare, e.g. back-to-back stem and leaf diagram, dual bar chart, vertical (stick) graphs, etc</p> <p>(B1 for diagram chart with one error in presentation)</p> <p>C1 for median (girls) > median (boys) oe</p> <p>or mean (girls) > mean (boys) oe</p> <p>or for range (boys) = range (girls) oe</p> <p>C1 for comments relating to all working (ie range/mean/median/charts dep on B4) QWC: Decisions should be justified, and calculations attributable</p> <p>SC If no marks scored B1 for a correct comparison</p> |
| | | | | Total for Question: 6 marks |
| | | | | |

M15.

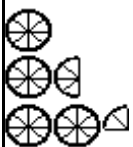
| | Working | Answer | Mark | Additional Guidance |
|-----|---------|--------------------------------|------|--|
| (a) | 3 × 6 | 18 | 2 | <p>M1 for 360 ÷ 60 or 6 seen or 1 gold = 20</p> <p>A1 cao</p> |
| (b) | | No and appropriate explanation | 1 | <p>C1 for 'No' and correct explanation, e.g. the pie charts only show that the proportions are the same</p> <p>OR explains that she could be correct if the total number of medals is the same in each year</p> <p>OR explains that we don't know if she is</p> |

| | | | | |
|--|--|--|--|--|
| | | | | correct because the total number of medals in 2004 is not known. |
| | | | | Total for Question: 3 marks |

M16.

| | Working | Answer | Mark | Additional Guidance |
|-------------------|---------|------------------|------|--|
| QWC (i) | | Diagram or chart | 4 | B1 for a key or suitable labels to identify boys and girls B1 for 5 correct animal labels B1 for a diagram or chart (combined or separate) set up for comparison, e.g. dual bar chart, back-to-back stem and leaf diagrams, pie charts, pictograms, vertical (stick) diagrams, etc C1 fully correct diagram or chart QWC: Fully correct diagram or chart and all labelling is correct and clear |
| | | | | Total for Question: 4 marks |

M17.

| Working | Answer | Mark | Additional Guidance |
|---------|---|------|---|
| |  | 3 | B2 for all 3 days correct (B1 for at least one day correct, i.e. one circle for Thursday) |

Key



represents
8 bikes

| |
|------------------------------------|
| Total for Question: 3 marks |
|------------------------------------|

M18.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|--|------------|------|--|
| (a) | Gym IHI II 7 Tennis IIII 4 Squash IHI 5 Swimming IIII 4 | 7, 4, 5, 4 | 2 | B2 for all frequencies correct (B1 for 2 frequencies or 2 tallies correct or one tally with its frequency correct) |
| (b) | | 5 | 1 | B1 for 5 or '5' ft from table |
| (c) | | Gym | 1 | B1 for gym or 'gym' ft from table |
| Total for Question: 4 marks | | | | |

M19.

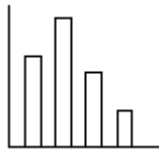
| | Working | Answer | Mark | Additional Guidance |
|--------|------------------------|---------|------|---|
| (a) | | Grade E | 1 | B1 for E, e Grade E, e, or 140° |
| (b) | | 100/360 | 1 | B1 5/18 oe |
| (c)(i) | $8 \times 2 = 16$ | 16 | 3 | B1 cao |
| (ii) | $360/40 \times 8 = 72$ | 72 | | M1 360/40 \times 8 oe, or 360/80 \times "16" oe, or "16" \times 4.5 or attempts to find an association eg 8 + 16 + 20 + 28 A1 cao or ft from (i) |

| | | | | |
|------------------------------------|--|--------|---|---|
| (d) | | Reason | 1 | B1 reason (eg %, not actual numbers; do not know how many students, etc) |
| Total for Question: 6 marks | | | | |

M20.

| | Answer | Mark | Additional Guidance |
|------------------------------------|----------|------|---|
| (a) | 4 | 1 | B1 cao |
| (b) | 7 | 1 | B1 cao |
| (c) | Bar at 5 | 1 | B1 cao. Bars may be narrow, but cannot be so narrow as to be a "bar line". |
| Total for Question: 3 marks | | | |

M21.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|---|----------------------------------|------|---|
| (a) |  | Bars drawn at heights 8, 5 and 3 | 2 | B2 for 3 bars drawn correctly (B1 for one bar drawn correctly or for 3 bars with correct heights) |
| (b) | | Blue | 1 | B1 ft for "blue" (ft from table or their bar chart) |
| Total for Question: 3 marks | | | | |

M22.

| Working | Answer | Mark | Additional Guidance |
|---|------------------------|------|--|
| $360^\circ \div 90 = 4$ Sector angles: (H = 80); S = 60; C = 100; T = 120 | Angles drawn, labelled | 3 | M1 for $360 \div 90$ or $80 \div 20$ or 4 seen or one angle correct in pie chart ($\div 2^\circ$) or table A1 for any two angles drawn in pie chart A1 for fully correct and labelled pie chart |
| Total for Question: 3 marks | | | |

M23.

| | Answer | Mark | Additional Guidance |
|------------------------------------|--------|------|---------------------|
| (a) | 3 | 1 | B1 cao |
| (b) | Cat | 1 | B1 cao |
| (c) | 22 | 1 | B1 cao |
| Total for Question: 3 marks | | | |

M24.

| Working | Answer | Mark | Additional Guidance |
|--|-----------------|------|--|
| $10/72 \times 360 = 50$ perch $23/72 \times 360 = 115$ bream $39/72 \times 360 = 195$ carp | 50, 115, 195 | 4 | M1 for evidence of method for at least one angle (could be implied by one correct angle on pie chart or in the table) A2 all three angles drawn $\pm 2^\circ$ tolerance, any order (A1 at least one angle correctly drawn $\pm 2^\circ$, or all three angles in the table) B1 names of fish as labels (dep on at least one angle drawn correctly, and exactly three sectors; initials will do) NB: Ignore table if pie chart provides marks |
| Total for Question: 4 marks | | | |

M25.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|-----------|---------------|------|--|
| (a) | | 7, 4, 2, 1, 2 | 2 | M1 for at least one correct frequency or tally A1 for 7, 4, 2, 1, 2 cao (B2 for correct frequencies without the use of tallies) |
| (b) | | 2 | 1 | B1 for 2 or ft values in table NB: B0 if the 7 is given with the 2 |
| (c) | $6 - 2 =$ | 4 | 2 | M1 for identifying 6 and 2, eg 6-2, as long as 6 and 2 are not identified with any incorrect operation A1 cao |
| Total for Question: 5 marks | | | | |

M26.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|------------------|-----------------|------|---|
| (a) | | Bars at 8 and 5 | 2 | B1 for bar of height 8 (above orange) B1 for bar of height 5 (above green) |
| (b) | | 6 | 1 | B1 for 6 cao |
| (c) | | yellow | 1 | B1 ft for yellow or ft from their diagram |
| (d) | $6 + 10 + 8 + 5$ | 29 | 1 | B1 correct answer or ft by adding the heights of the columns on the graph |
| Total for Question: 5 marks | | | | |

M27.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|--|---------|------|--|
| (a) | | 2 | 1 | B1 cao |
| (b) | $7 + 4 + 3 + 5 + 2 + 4 + 5 = 30$ $6 + 2 + 1 + 5 + 3 + 3 + 8 = 28$ OR $1 + 2 + 2 + 0 - 1 + 1 - 3 = 2$ | 2 hours | 2 | M1 finds the totals of Robin and Helen. A1 cao OR M1 find the differences of Robin and Helen A1 cao |
| (c) | 2 3 4 4 5 5 7 | 4 hours | 2 | M1 orders the values A1 cao |
| (d) | $(6 + 8) \div 7$ | 2 | 2 | M1 attempts to find mean A1 2 cao |
| Total for Question: 7 marks | | | | |

M28.

| | | Working | Answer | Mark | Additional Guidance |
|-------------------------------------|-----|---------------|--|------|--|
| FE | (a) | | Correct table WITH EITHER Bar chart OR Pictogram OR Pie Chart | 6 | B1 Table with at least 2 columns with car, lorry, van, motorbike and bus rows M1 tally column completed or headed frequency column with at least two entries correct A1 correct frequencies (7, 4, 5, 6, 2) WITH EITHER B1 labelled axes with a uniform scale M1 bars labelled all the same width A1 bars all correct (ft from a) OR B1 labelled pictogram M1 5 classes + key A1 all correct (ft from a) OR B1 circle with 5 sectors labelled M1 correct calculation of at least one angle A1 all sectors correct (ft from a) |
| | (b) | 25% of 24 = 6 | Yes as $5 < 6$ | 2 | M1 finding 25% of 24 A1 Yes as $5 < 6$, (ft from a) |
| | (c) | | Survey at different places Survey at different times Do a bigger survey | 2 | B2 2 or more reasons (B1 1 reason) Ignore irrelevant reasons |
| Total for Question: 10 marks | | | | | |

E1. This question was done well by many candidates. Most were able to identify bar chart C for statement (ii), but a common incorrect answer for statement (iii) was B.

E2. Most candidates were able to score 2 or 3 marks in this question, but it was clear that a significant number of candidates were not equipped with a protractor and ruler for the examination. Candidates should be encouraged to bring a protractor to this examination. A common answer here was to correctly measure one of the angles (usually French 60°) and then to measure one of the remaining angles incorrectly (usually Music 108°). A common error in calculating the angle was to use $12 + 60 = 72$ for Art students, and then to add 60 to each of the student numbers to get the 'angles' of 70, 80 and 78.

E3. Part (a) was answered correctly by just over half the candidates.

Answers of $\frac{1}{4}$ with 15, 90, 0.25 or 25% were also permitted. Common incorrect responses, which scored no marks, were 90° (the size of the angle on the pie chart

representing Comedy), 15 (the number of student preferring Comedy), $\frac{1}{5}$ (as the pie chart is in 5 sections!), and $\frac{15}{360}$.

Many candidates struggled to work out the total number of students Colin asked although 44% did score both marks. The most common incorrect response was 50. Those that obtained at least three of the sections correct, often seen on the diagram, were rewarded with a method mark. However many then failed to complete the task by either adding their values incorrectly or leaving out one of the sectors.

E4. Around 96% of candidates answered all 3 parts of this question correctly. The few responses that were incorrect read the wrong bar, and gave an answer of 6 (the number of TVs sold on Friday), or 9 (the number of TVs sold on Saturday in part (a) and did not read the height of the bar correctly in (b) with 3 being the most common incorrect response.

E5. On this paper we did not test the drawing of a pie chart, instead we gave candidates a pie chart and asked them to interpret it.

Parts (a)(i) and (ii) were both correct in 35% of cases. The mark-scheme was set up to accept answers written as fractions, decimals and percentages but 1 mark compensation was given for those candidates that wrote both answers as 1 out of 4 and 3 out of 4. We also allowed one mark in part (a)(ii) for those candidates that wrote an answer that was 1 – their answer to a(i). No marks at all were awarded for those candidates that wrote any of their probabilities as ratios as a ratio of 1:4 or 3:4 are probabilities out of 5 and 7 respectively.

In part (b), only 30% of candidates scored full marks for an answer of 72. One mark was awarded for a method that realised that 30° was a twelfth of 360° or one person was represented by 5° or for a partial method to add at least 3 correct frequencies out of the five; 8% gained this method mark which more candidates could have gained this method mark if they had shown their attempt to add.

E6. Part (a) in this question was almost always answered correctly with 80% of candidates scoring this mark. In part (b) candidates were allowed marks for writing similar responses e.g. London is colder than Majorca and Majorca is hotter than London. The question which is notionally set at a low tariff on the foundation tier was trying to elicit any reasonable comments on this dual bar chart. It was interesting to see that 63% of candidates scored 2 marks and 24% scored 1 mark.

##

This was not well answered. In part (a) many candidates gave 4 as the modal number of goals

scored, possibly reading the modal frequency. In part (b) many candidates added the figures from a column, this could have been the number of goals column, giving a common incorrect answer of 10 or the frequencies column giving an incorrect total of 24. When candidates realised that they should multiply the number of goals scored by the frequencies errors still occurred in the arithmetic with $440 = x$ and $1244 = x$ being seen often. The pie chart was again poorly answered. Whilst some candidates could calculate the angles required, they could not draw them accurately. Too few candidates showed working out for this question.

##

Foundation

Many candidates knew exactly what was required and achieved three marks. However, a significant number of candidates simply wrote a question for only one person to give the information of how they had travelled to the shopping centre, and consequently scored just one mark.

Higher

Only about one in seven of candidates scored full marks for their responses to this question. This was the least well answered question on the paper. A large proportion of candidates wrote a question for a questionnaire rather than design a data collection sheet.

##

Most candidates scored well on this question. The majority drew a comparative bar chart with a clear key and the days of the week were generally in the correct place. Few, however, labelled their axes correctly so full marks were a rarity.

##

In parts (a) and (b) the question was well answered.

For part (c) many candidates realised they had to add the frequencies from the graph and scored full marks. Incorrect answers occurred when candidates misread the frequencies or failed to add correctly.

##

A correct answer of 12 was seen more than it was not in part (a), 10 being the most popular incorrect answer seen. It was rare to see any working shown and so candidates usually earned the full two marks or no marks at all.

In part (b), 'Hockey' was selected as the team that won the more matches, candidates simply comparing the size of the respective sectors.

##

Most candidates were able to gain at least 1 mark in part (a) for partially completing the tally chart. Full marks were often denied because of carelessness in transferring the given data. Other common errors included frequency columns of 3 (1×3), 14 (2×7), etc. and 3, 10 ($3 + 7$), 15 ($3 + 7 + 5$), etc. and $3/20$, $7/20$, etc.

In part (b), a common mistake was to give an answer of 7, the frequency of the mode 2, or 3 since in the frequency column the number 3 appeared more times than any other number.

Part (c) was well answered by the more able candidate. However many candidates merely added the 6 numbers to give an answer of 114. 96.5 was also a common answer to part (c), by candidates failing to apply the correct order of operations. This did however gain 1 mark. Very many candidates actually found the median, which was also 19. This gained no credit. However an answer alone of 19 with no working did gain full credit. Clearly some candidates may have been very fortunate in this respect.

##

In part (a), very few candidates failed to gain full credit.

Part (b) was less successful with many candidates re-defining 'Outdoor Activity' and selecting just 2 or 3 of the given activities. The sum was then usually calculated without showing any working and so gaining no credit. An incorrect answer of 21 was also common.

The bar chart in part (c) was usually correctly completed. It was pleasing to see the use of rulers in the drawing of the bar.

E19. Part (a) was well answered, but few candidates gained the mark in part (b). Many attempted to estimate the fraction of the diagram, hence many gave $1/4$ or $1/3$ as the answer. Of those who used the 100° , the error for many was in giving it out of a number other than 360° .

In part (c) most candidates gained some credit, sometimes by showing evidence of using inventive methods. Some found and used a scaling factor such as 4.5. Others found an association using the relationship of the angles, showing $8 + 16 + 20 + 28$, or equivalent methods.

Part (d) was a discriminator, and it was encouraging to find half the candidates were able to distinguish between proportion and actual values, giving an acceptable explanation why Sean was wrong.

E20. This was a well answered question with most candidates scoring full marks. Zero marks in any section were usually due to non-attempts.

E21. Both parts of this question were answered very well indeed. Few marks were lost in the completion of the bar chart in part (a) and where they were it was more often because of incorrect widths or placement of the bars rather than the heights of the bars. A small number of candidates either gave the answer '8' rather than 'blue' in part (b) or gave no answer at all.

E22. Most candidates attempted to draw exactly 3 more sectors and the pie charts were nearly always labelled. However, there were many errors in the calculation of angle sizes. Some candidates noted that the difference between the frequency of 20 and the angle of 80° was 60 and went on to add 60 to each of the other frequencies given. Occasionally, candidates had worked out the angles correctly but had not completed the diagram, presumably because they had no access to a protractor. These candidates could only be given partial credit. 43% of candidates provided a completely correct pie chart whilst a further 28% of candidates gained some credit for their answers.

- E23.** Part (a) was answered correctly by almost all candidates. The second part of the question was also answered very well though a few candidates gave “10” as their answer. Some candidates gave both the name of the pet and the frequency. The vast majority of candidates gained the mark for the final part of the question though some careless errors led to some candidates giving the answer “21” or “23”.
- E24.** Performance on this question was poor, with only $\frac{1}{4}$ of candidates scoring significant marks. Angles or calculations leading to angles were rarely shown; many pie charts appeared to have been drawn only roughly in proportion to the figures, but scored no marks as the angles, when measured, were rarely accurate. Some inaccuracies arose due to sectors being drawn freehand. Labelling showed some improvement, but without some accurate angles did not attract marks on their own.
- E25.** Parts (a) & (b) were well answered. There were a few minor slips in tallying, and the frequency column was sometimes misplaced, but rarely inaccurate. Part (c) was poorly answered. Many misunderstood the term “range”, whilst a significant minority calculated this from the frequency (7-1).
- E26.** Parts (a), (b) and (d) were usually completed well. It was unfortunate that a significant number of candidates failed to attempt part (a), which is inexplicable. In part (c) many candidates did not understand the term “mode”, and some put “10” rather than the colour as requested.