

Date:

Unit 3 Questions



Q1. There are a total of 96 children in Years 4, 5 and 6
37 of these children cannot swim.
11 children in Year 4 cannot swim.
21 children in Year 5 can swim.

There are 30 children in Year 6
18 of these 30 children can swim.

(i) Work out the number of children in Year 4 who can swim.

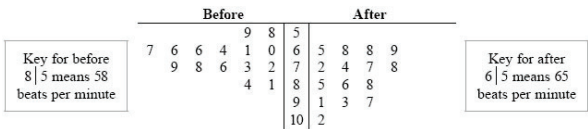
(ii) Work out the total number of children in Year 5

(Total for Question is 4 marks)



Q3.
Zoe recorded the heart rates, in beats per minute, of each of 15 people.
Zoe then asked the 15 people to walk up some stairs.
She recorded their heart rates again.

She showed her results in a back-to-back stem and leaf diagram.



Compare the heart rates of the people before they walked up the stairs
with their heart rates after they walked up the stairs.

(Total for Question is 6 marks)



Q4.
25 students in class A did a science exam.
30 students in class B did the same science exam.

The mean mark for the 25 students in class A is 67.8
The mean mark for all the 55 students is 72.0

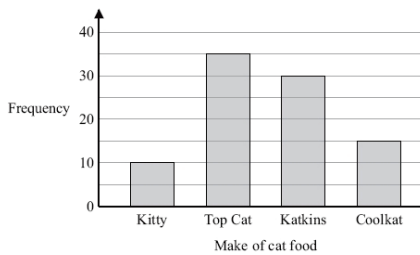
Work out the mean mark for the students in class B.

(Total for Question is 3 marks)



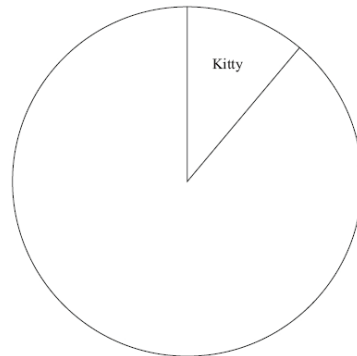
Q2.
A survey was carried out for a magazine.
90 cat owners were asked to write down the make of cat food their cats liked best.

The bar chart shows information about the results.



The information in the bar chart is going to be shown in a pie chart.

Use the information in the bar chart to complete the pie chart.



(Total for Question is 3 marks)



Q5.
The table gives information about the temperature, T °C, at noon in a town for 50 days.

Temperature (T °C)	Frequency
$8 < T \leq 12$	6
$12 < T \leq 16$	8
$16 < T \leq 20$	13
$20 < T \leq 24$	21
$24 < T \leq 28$	2

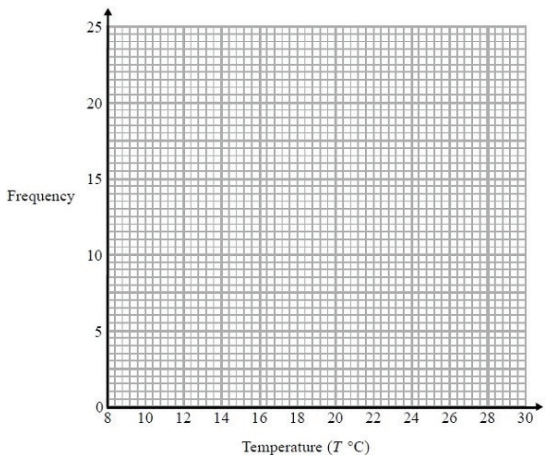
(a) Write down the modal class interval.

(1)

(b) Calculate an estimate for the mean temperature.

..... °C (4)

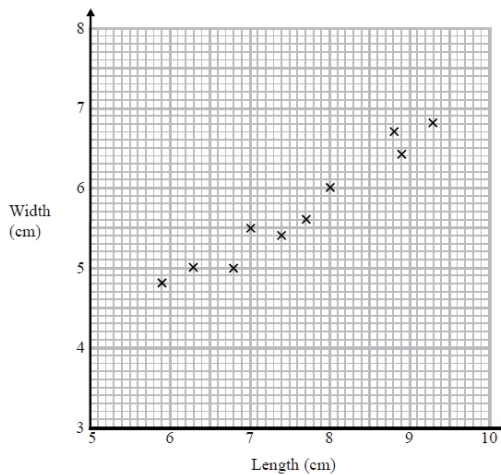
(c) Draw a frequency polygon for the information in the table.



(Total for Question is 7 marks)



Q6.
The scatter graph shows some information about ten pine cones from the same tree.
It shows the length and the width of each pine cone.



(a) Describe the relationship between the length and the width of a pine cone.

.....
..... (1)

Another pine cone from this tree has a length of 8.4 cm.

(b) Estimate the width of this pine cone.

.....cm (2)
(Total for question = 3 marks)



Q7. Walkden Reds is a basketball team.

At the end of 11 games, their mean score was 33 points per game.
At the end of 10 games, their mean score was 2 points higher.

Jordan says,

"Walkden Reds must have scored 13 points in their 11th game."

Is Jordan right?

You must show how you get your answer.

.....
(Total for question is 3 marks)



Q8.

Mr Brown gives his class a test.

The 10 girls in the class get a mean mark of 70%
The 15 boys in the class get a mean mark of 80%

Nick says that because the mean of 70 and 80 is 75 then the mean mark for the whole class in the test is 75%

Nick is not correct.

Is the correct mean mark less than or greater than 75%?

You must justify your answer.

.....
(Total for question = 2 marks)



Q9. The table shows some information about the foot lengths of 40 adults.

Foot length (f cm)	Number of adults
$16 \leq f < 18$	3
$18 \leq f < 20$	6
$20 \leq f < 22$	10
$22 \leq f < 24$	12
$24 \leq f < 26$	9

(a) Write down the modal class interval. (1)

(b) Calculate an estimate for the mean foot length. cm (3)

.....
(Total for question = 4 marks)

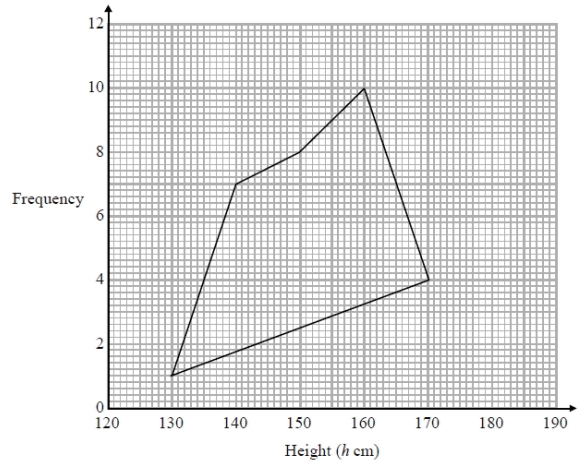


Q10. The grouped frequency table gives information about the heights of 30 students.

Height (h cm)	Frequency
$130 < h \leq 140$	1
$140 < h \leq 150$	7
$150 < h \leq 160$	8
$160 < h \leq 170$	10
$170 < h \leq 180$	4

(a) Write down the modal class interval. (1)

This incorrect frequency polygon has been drawn for the information in the table.



(b) Write down two things wrong with this incorrect frequency polygon.

1
2

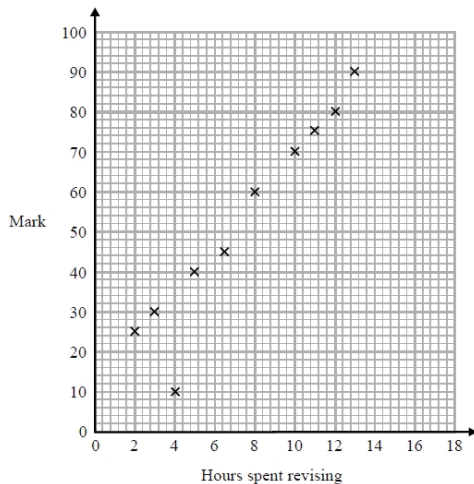
.....
(Total for question is 3 marks)



Q12.

The scatter diagram shows information about 10 students.

For each student, it shows the number of hours spent revising and the mark the student achieved in the Spanish test.



One of the points is an outlier.

(a) Write down the coordinates of the outlier.

.....
(1)

For all the **other** points

(b) (i) draw the line of best fit,
(ii) describe the correlation.

.....
.....
(2)

A different student studies for 9 hours.

(c) Estimate the mark gained by this student.

.....
(1)

The Spanish test was marked out of 100

Lucia says,

"I can see from the graph that had I revised for 18 hours I would have got full marks."

(d) Comment on what Lucia says.

.....
.....

.....
(Total for question is 5 marks)