Statistics Toolkit

Question Paper

Course	Edexcel IGCSE Maths
Section	6. Statistics & Probability
Topic	Statistics Toolkit
Difficulty	Hard

Time allowed: 70

Score: /58

Percentage: /100

Question 1

Hertford Juniors is a basketball team.

At the end of 10 games, their mean score is 35 points per game.
At the end of 11 games, their mean score has gone down to 33 points per game.

How many points did the team score in the 11th game?

[3 marks]

Question 2

There are 18 packets of sweets and 12 boxes of sweets in a carton.

The mean number of sweets in all the 30 packets and boxes is 14.
The mean number of sweets in the 18 packets is 10.

Work out the mean number of sweets in the boxes.

[3 marks]

Question 3

There are 15 children at a birthday party.

The mean age of the 15 children is 7 years.

9 of the 15 children are boys.
The mean age of the boys is 5 years.

Work out the mean age of the girls.

[3 marks]

Question 4

There are 10 boys and 20 girls in a class.
The class has a test.

The mean mark for all the class is 60
The mean mark for the girls is 54

Work out the mean mark for the boys.

[3 marks]

Question 5

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.

[3 marks]

Question 6

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.

[2 marks]

Question 7

Bob asked each of 40 friends how many minutes they took to get to work.
The table shows some information about his results.

Time taken (m minutes)	Frequency
$0 < m \leqslant 10$	3
$10 < m \leqslant 20$	8
$20 < m \leqslant 30$	11
$30 < m \leqslant 40$	9
$40 < m \leqslant 50$	9

Work out an estimate for the mean time taken.

[4 marks]

Question 8

Sumeet records the times, in minutes, for 40 runners to finish a half marathon.
Information about these times is shown in the table.

Time (t minutes)	Frequency
$60 < t \leqslant 90$	10
$90 < t \leqslant 120$	14
$120 < t \leqslant 150$	9
$150 < t \leqslant 180$	5
$180 < t \leqslant 210$	2

Calculate an estimate for the mean time.

[4 marks]

Question 9

The table gives information about the heights of 50 trees.

Height(h metres)	Frequency
$0 < h \leqslant 4$	8
$4 < h \leqslant 8$	21
$8 < h \leqslant 12$	12
$12 < h \leqslant 16$	7
$16 < h \leqslant 20$	2

Work out an estimate for the mean height of the trees.

[4 marks]

Question 10a

The table gives information about the heights of 35 girls.

Height(h metres)	Frequency
$1.30 \leqslant h < 1.40$	11
$1.40 \leqslant h < 1.50$	9
$1.50 \leqslant h < 1.60$	7
$1.60 \leqslant h < 1.70$	6
$1.70 \leqslant h < 1.80$	2

Find the class interval that contains the median.

[1 mark]

Question 10b

Work out an estimate for the mean height.

[4 marks]

Question 11a

The table shows information about the weekly earnings of 20 people who work in a shop.

Weekly earnings($£\, x$)	Frequency
$150 < x \leqslant 250$	1
$250 < x \leqslant 350$	11
$350 < x \leqslant 450$	5
$450 < x \leqslant 550$	0
$550 < x \leqslant 650$	3

Work out an estimate for the mean of the weekly earnings.

[3 marks]

Question 11b

Nadiya says,

"The mean may **not** be the best average to use to represent this information."

Do you agree with Nadiya?
You must justify your answer.

[1 mark]

Question 12a

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

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

Write down the modal class interval.

[1 mark]

Question 12b

Calculate an estimate for the mean foot length.

[3 marks]

Question 13a

Jenny works in a shop that sells belts.

The table shows information about the waist sizes of 50 customers who bought belts from the shop in May.

Belt size	Waist(w inches)	Frequency
Small	$28 < w \leqslant 32$	24
Medium	$32 < w \leq 36$	12
Large	$36 < w \leq 40$	8
Extra Large	$40 < w \leq 44$	6

Calculate an estimate for the mean waist size.

[3 marks]

Question 13b

Belts are made in sizes Small, Medium, Large and Extra Large.

Jenny needs to order more belts in June.
The modal size of belts sold is Small.

Jenny is going to order $\frac{3}{4}$ of the belts in size Small.

The manager of the shop tells Jenny she should **not** order so many Small belts.

Who is correct, Jenny or the manager?
You must give a reason for your answer.

[2 marks]

Question 14

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

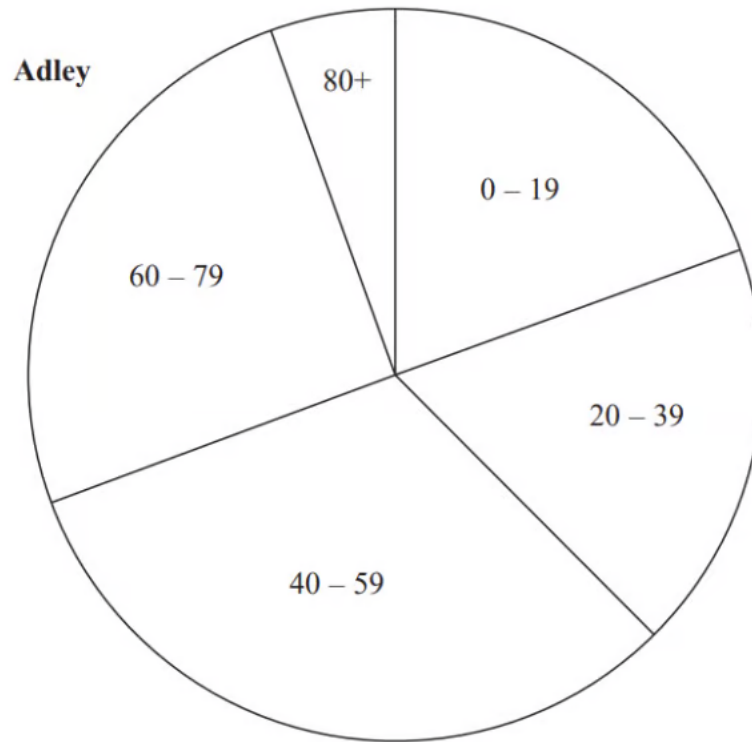The mean mark for the 25 students in class A is 67.8
The mean mark for all the 55 students is 72.0

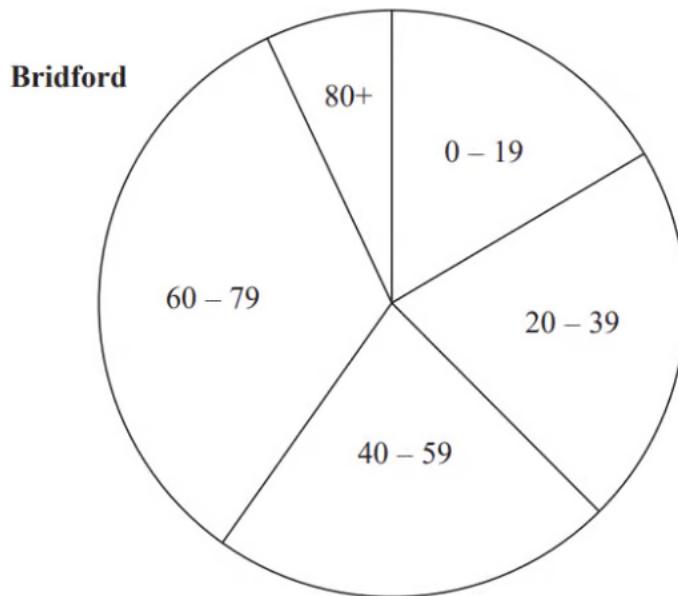Work out the mean mark for the students in class B.

[1 mark]

Question 15

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

Adley

80+

0 – 19

60 – 79

20 – 39

Diagrams accurately drawn

40 – 59

Bridford

80+

0 – 19

60 – 79

20 – 39

40 – 59

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.

[3 marks]

Question 16

Here are two sets of numbers, A and B.

	Set A	
200	160	
104	100	

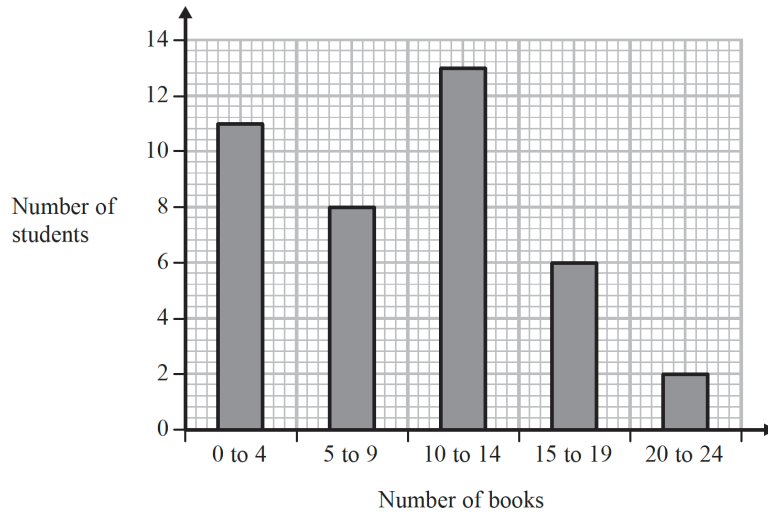|	Set B	
270	400	483
300	x	

mean of Set A : mean of Set B = 3 : 8

Work out the value of x.

[4 marks]

Question 17a

Fran asks each of 40 students how many books they bought last year.

The chart below shows information about the number of books bought by each of the 40 students.

Work out the percentage of these students who bought 20 or more books.

...........%

[2 marks]

Question 17b

Show that an estimate for the mean number of books bought is 9.5
You must show all your working.

[1 mark]