Name: . . . . . **GCSE Mathematics Higher**

Statistics 1 Test – Grouped Data, Frequency Table, Mean Value

Submission

To mark this test you submit the answers using the online stats quiz at:
www.edu-sol.co.uk/diagnostic.asp

If you have not completed an online quiz before then you may wish to try the Practice Quiz.

After you submit your answers, record the date and time of the submission and the username you used to login. You can then re-visit the site and review your test and feedback.

Date/Time of submission: . . . . . Username: . . . . . .

Before submitting the answers you are advised to answer the questions fully on this question paper. This will help later when you check your working against the feedback. Some questions have several parts but it is only the **quiz answer** that you submit online.

Note that the test has one multiple-choice type question where you select the letter corresponding to the 'best' response.

Grading

As soon as you complete the submission you will receive your mark and feedback.

Total questions: 7
Maximum mark for this test: 15

Start of Questions

1. Stratified (1 mark)

Five hundred marathon runners are grouped into five groups according to their race times. A stratified sample of 100 runners is planned. If the number of runners in the second group is 75, calculate the number in the sample for that group.

……

Quiz answer: . . . . . .

Questions 2 to 5 are about the number of pages read by students in a fixed time.

Thirty students were asked to read a book for ten minutes and the number of pages each student read was recorded. The table lists the number of pages for each student.

10	23	4	13	19	7	11	12	27	12	18	21	3	15	18
22	16	24	9	14	17	22	28	4	6	12	20	8	7	24

Complete the tally, frequency and midpoint columns in this grouped frequency table:

Number of Pages	Tally	Frequency	Midpoint
0 - 4	|||	3	
5 - 9	𝍸	5	
10 - 14	𝍸||	7	
15 - 19			
20 - 24			
25 - 29			

2. Frequency Table (3 marks)

In the quiz you enter the three frequencies, starting with the group (class) 15-19.

3. Midpoint Values (1 mark)

In the quiz you enter the three midpoints, starting with the group (class) 15-19.

4. Estimate Total Pages (4 marks)

The frequency table below is for a different group of students. Calculate an estimate of the total pages read for **each** of the groups and so complete the Total Pages column.

Number of Pages	Frequency f	Midpoint x	Total Pages fx
1 - 5	2	3	
6 - 10	6	8	
11 - 15	8	13	
16 - 20	9	18	
21 - 25	4	23	
26 - 30	1	28	
Total Students:	**30**	**Total Pages:**	

Part a) In the quiz you enter the total pages for **each** of the six groups. (3 marks)

Part b) Calculate an estimate of the total pages read by **all** the students. (1 mark)

…….

Quiz answer for part b): . . . . . .

5. Mean Value (2 mark)

Another group of 25 students read a total of 344 pages. Calculate the mean of the pages read per student. Write the answer to one decimal place.

…….

Quiz answer: . . . . . .

6. Grouped Data (2 marks)

This question presents you with possible reasons for grouping data to work out a frequency distribution.

Choose the best response from a. to f. below:

a. the grouped frequency values show more detail than the raw data.
b. the grouped frequencies summarise the data for each group.
c. the data are grouped when a small amount of discrete data is analysed.
d. the grouped frequency shows the average (the mean).
e. the grouped frequency values can be plotted on a histogram.
f. you cannot make a frequency distribution of continuous data without first grouping the data.

Quiz answer: . . . . . .

7. Data Type (2 marks)

This question asks you to match a description of a variable (A, B and C) to the type of variable. Team cyclists in a road race wear the team colours. For each race they are awarded points, depending on their finishing times. A database for the cyclists records each cyclists name and ID, the team colour, the number of points and the finishing times.

State whether the following variables are **continuous**, **discrete** or **qualitative**.

A A runner's team colour.
B The time to complete a race.
C The number of points awarded.

A …… B …… C ……

End of Questions