



Rewarding Learning

**General Certificate of Secondary Education
2025**

Statistics

Unit 2

Foundation Tier

[GST21]

THURSDAY 19 JUNE, AFTERNOON

**MARK
SCHEME**

General Marking Instructions

Introduction

The mark scheme normally provides the most popular solution to each question. Other solutions given by candidates are evaluated and credit given as appropriate; these alternative methods are not usually illustrated in the published mark scheme.

The marks awarded for each question are shown in the right hand column and they are prefixed by the letters **M**, **A** and **MA** as appropriate. The key to the mark scheme is given below:

M indicates marks for correct method.

A indicates marks for accurate working, whether in calculation, readings from tables, graphs or answers.

MA indicates marks for combined method and accurate working.

The solution to a question gains marks for correct method and marks for an accurate working based on this method. Where the method is not correct no marks can be given.

A later part of a question may require a candidate to use an answer obtained from an earlier part of the same question. A candidate who gets the wrong answer to the earlier part and goes on to the later part is naturally unaware that the wrong data is being used and is actually undertaking the solution of a parallel problem from the point at which the error occurred. If such a candidate continues to apply correct method, then the candidate's individual working must be **followed through** from the error. If no further errors are made, then the candidate is penalised only for the initial error. Solutions containing two or more working or transcription errors are treated in the same way. This process is usually referred to as "follow-through marking" and allows a candidate to gain credit for that part of a solution which follows a working or transcription error.

It should be noted that where an error trivialises a question, or changes the nature of the skills being tested, then as a general rule, it would be the case that not more than half the marks for that question or part of that question would be awarded; in some cases the error may be such that no marks would be awarded.

Positive marking

It is our intention to reward candidates for any demonstration of relevant knowledge, skills or understanding. For this reason we adopt a policy of **following through** their answers, that is, having penalised a candidate for an error, we mark the succeeding parts of the question using the candidate's value or answers and award marks accordingly.

Some common examples of this occur in the following cases:

- (a) a numerical error in one entry in a table of values might lead to several answers being incorrect, but these might not be essentially separate errors;
- (b) readings taken from candidates' inaccurate graphs may not agree with the answers expected but might be consistent with the graphs drawn.

When the candidate misreads a question in such a way as to make the question easier only a proportion of the marks will be available (based on the professional judgement of the examiner)

- 1 (a) 11.1% A1
 (b) Expiry/Optional Renewals A1
 (c) Conversion: Provisional to Full and Provisional Licence A1
 (d) Percentages are more readily understood by the general public. A1

- 2 (a) She has written a question, not a statement. A1
 (b) Suitable hypothesis connecting the variables, e.g. older pupils get more homework. A1
 (c) Primary and Discrete A2
 (d)

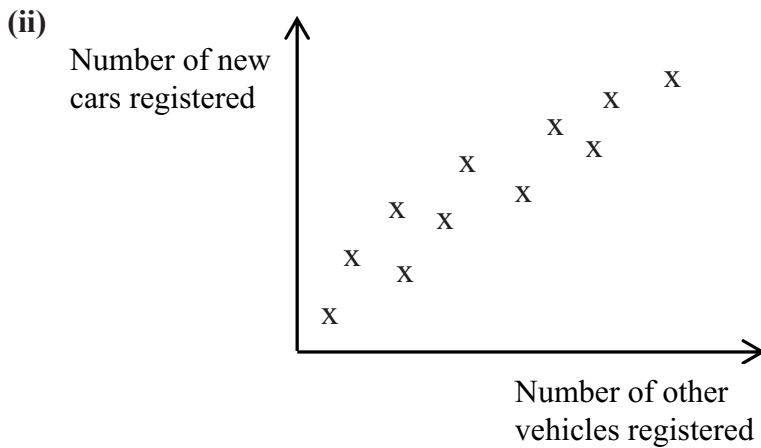
Key: **H** = 2 homeworks

Year Group	
8	H H H H
9	H H H †
10	H H H H †
11	H H H
12	H H H H

- (e) Older students do not necessarily get more homework. A3
 (f) The reliability of this conclusion could be improved by asking more students in each year group. A1

AVAILABLE MARKS
4
9

- 3 (a) Compound bar chart A1
- (b) Advantage – The total number of vehicle registrations can be seen quickly. A1
- Disadvantage – It would be more difficult to see the total number of other vehicles and harder to compare the different types. A1
- (c) Eddie is incorrect as 5000 is smaller than any of the individual values so cannot be the mean. A2
- (d) (i) Scatter diagram A1



- 4 (a) Suitable explanation, e.g. Registration of new cars may not be possible over the Christmas holiday period. A1
- (b) Renault A1
- (c) Data logging MA1

(d)

	October	November	December
Mean	185.8	181.2	98.5
Range	313	230	117

MA2 A2

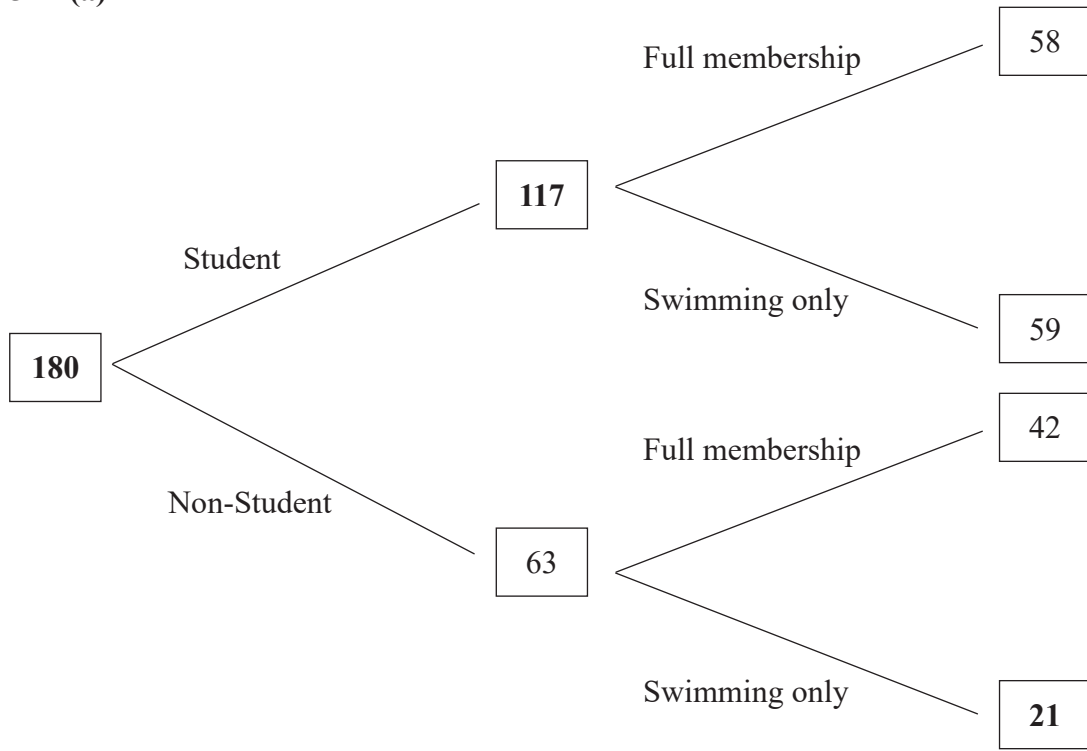
- (e) (i) On average there were more cars registered in **October** because the mean for that month is **greater** than the other two. A2
- (ii) There was **less** variation in the number of cars registered in **December** because the **range** is smaller for that month than it is for the other two. A3

AVAILABLE MARKS

8

12

5 (a)

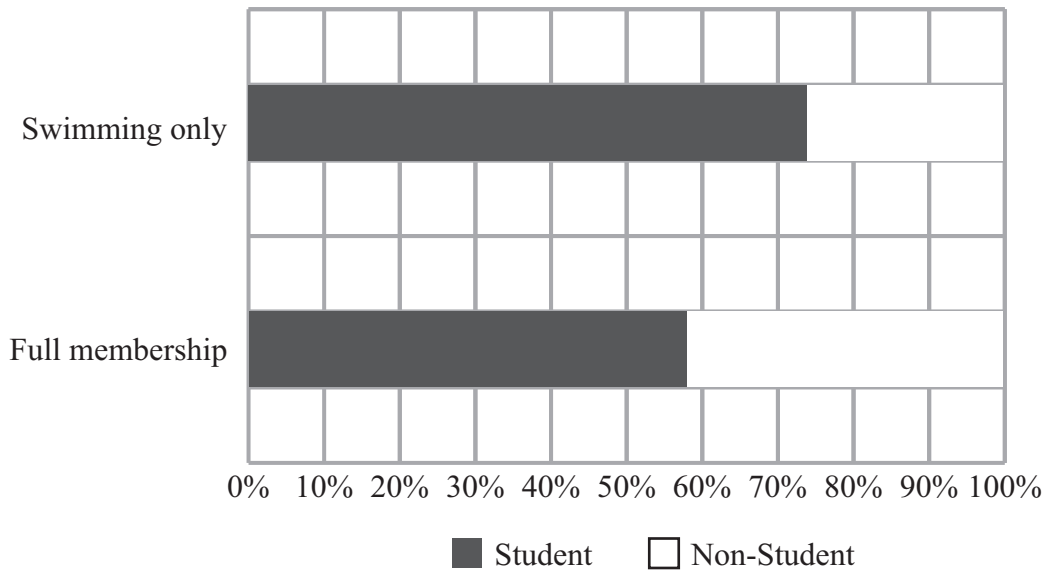


MA3

(b) $42 + 58 = 100$

MA1

(c) Full membership (students): $\frac{58}{100} = 58\%$



MA1 A1

(d) (i) The Swimming only bar for students will get longer. A1

(ii) The number of non-student members will stay the same. A1

(e) The information it asks for is not relevant to the investigation. A1

AVAILABLE MARKS

(f) Suitable question including time frame with mutually exclusive, exhaustive response section. A3

(g) The questionnaire was distributed to students and they are not involved in the investigation. A1
 It was also distributed between 6:30 am and 7:00 am one Saturday morning which was a very short time frame. A1

6 (a) 3 A1

(b) 53.7% of those who took their test at a centre in Northern Ireland passed it. A1

(c) Elaine may not be correct as the figures in the chart are percentages so it is not possible to comment on the actual numbers of people. A3

(d)

		Private Cars		
		Male	Female	Total
Armagh	Conducted	260	228	488
	Fail	102	113	215
	Pass	158	115	273
	Pass%	60.8%	50.4%	55.9%

MA2 A2

(e) $1 - 0.559 = 0.441$ or $\frac{215}{488}$ MA1

(f) Risk = $\frac{113}{228} = 0.496$ M1 A1

7 (a)

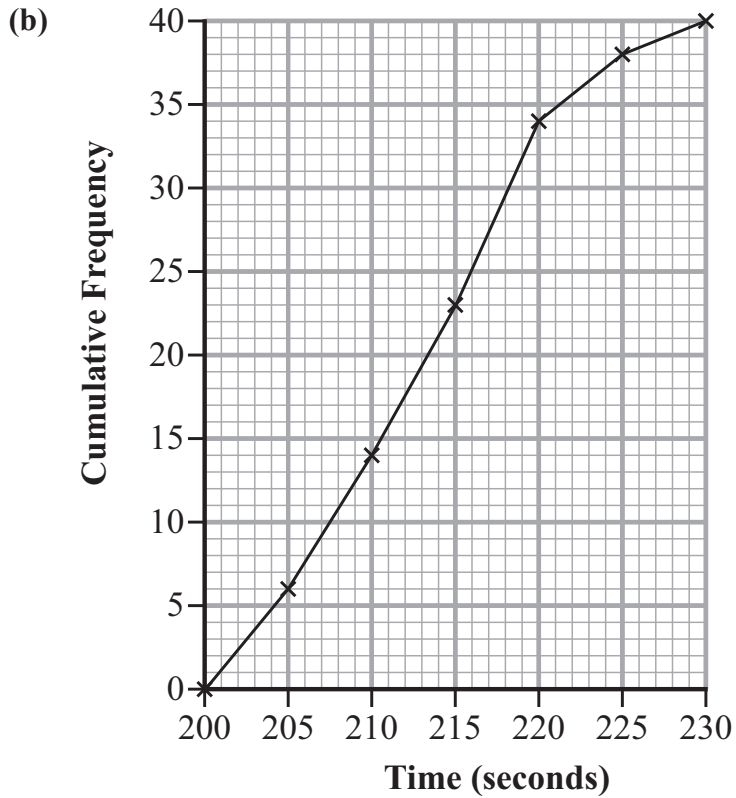
Time, t (secs)	Frequency	Cumulative Frequency
$200 \leq t < 205$	6	6
$205 \leq t < 210$	8	14
$210 \leq t < 215$	9	23
$215 \leq t < 220$	11	34
$220 \leq t < 225$	4	38
$225 \leq t < 230$	2	40

MA2

AVAILABLE MARKS

14

12



A3

(c) (i) 213 seconds

MA1

(ii) $218 - 207.5 = 10.5$ seconds

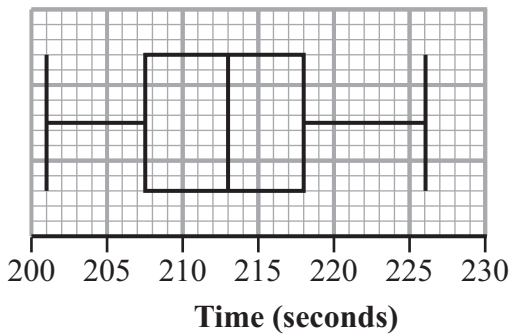
MA1 A1

(d) 9 cyclists

MA1

(e) Largest value = $201 + 25 = 226$ seconds

MA1



MA3

(f) Normal distribution
The box plot is roughly symmetrical

A1

A1

15

8 (a)

Mass kg	Frequency, f	m	mf
0.5–1.0	2	0.75	1.5
1.0–1.5	4	1.25	5
1.5–2.0	6	1.75	10.5
2.0–2.5	5	2.25	11.25
2.5–3.0	3	2.75	8.25
Totals	20		36.5

MA2

$$\text{Mean} = \frac{36.5}{20}$$

M1

$$= 1.825 \text{ kg}$$

A1

(b) (i) No difference

A1

(ii) The mass would still be in the same interval so the frequency would not change in any of the groups.

A1

Total

AVAILABLE
MARKS

6

80