Marking guidance: Higher and Foundation tiers

GCSE Statistics (8382)

Introduction

Teachers have told us that they would like to learn more about how to mark like an examiner. This document aims to outline the fundamental aspects of the marking process. Our aspiration is that it will facilitate a greater understanding of how to apply an AQA mark scheme and improve confidence in awarding marks accurately.

The examples used in this document are taken from Foundation past papers, however, the principles remain the same for Higher Tier.

Version 1.0
April 2024

Types of marks

There are several different types of marks awarded by examiners. M1 means 1 mark, SC2 means 2 marks and so on. Here is a summary of the types of marks used.

M	Method marks are awarded for a correct method which could lead to a correct answer.
A	Accuracy marks are awarded when following on from a correct method. It is not necessary to always see the method. This can be implied.
B	Marks awarded independent of method.
ft	Follow through marks. Marks awarded for correct working following a mistake in an earlier step.
SC	Special case. Marks awarded for a common misinterpretation which has some mathematical worth.
M dep	A method mark dependent on a previous method mark being awarded.
B dep	A mark that can only be awarded if a previous independent mark has been awarded.

General guidance

If there are alternative methods in the mark scheme, examiners follow one scheme that awards the students with the most marks. Students cannot score marks from alternative method 1 and alternative method 2 at the same time, for example.

Students will often work out calculations in a different way to that shown in the mark scheme. Accept any equivalent calculation. For example, multiplication may be shown as repeated addition.

Awarding method marks (M1)

Examiners will award method marks for either a correct calculation or a correct value seen which implies the correct calculation has been completed.

The correct value can be seen anywhere, even as the student's final answer to the question.

Example:

Mark scheme says: $\dfrac{50+54+...+66}{9}$ or $\dfrac{522}{9}$ M1

                           58   A1

Student response 1

$$\frac{522}{9}$$

Answer

$\dfrac{522}{9}$ seen.

M1A0

Student response 2

$$50+54+52+57+57+56+65+65+65 \div 9$$

Answer

Correct sum seen.

M1A0

Student response 3

59

Answer

No calculation given.
Incorrect value seen.

M0A0

Dependent method marks (M1dep)

A dependent method mark can only be awarded if previous method mark(s) have been awarded. However, if an examiner is awarding a method mark for a correct value seen, sight of the correct value stated in the M1dep part of the mark scheme would automatically imply the first mark.

When awarding method marks, examiners will always follow through from values given from correct calculations, even if the values themselves are incorrect. This means that students are allowed to truncate, round or give incorrect evaluations and still be awarded method marks, providing the correct calculation is shown. Sometimes mark schemes use the terms "their" to emphasise this.

Example:

Mark scheme says:

$360 - 208 - 86$ or 66		M1
$\dfrac{\text{their } 66}{208} \times 312$		M1dep
99		A1

Student response 1

$$360 - 208 - 86 = 66$$

$$\frac{66}{208}$$

Answer

First line seen with correct answer.
The multiplication is not included so no second method mark.
M1M0depA0

Student response 2

$$360 - 208 - 86 = 76$$

$$\frac{76}{208} \times 312 = 114$$

Answer

Correct method seen, so M1 even though the answer is incorrect.
Second M1 is gained as they have used their answer.
A1 not awarded.
M1M1depA0

Student response 3

$$\frac{86}{208} \times 312 = 129$$

Answer

No working for first method mark seen. Although an incorrect value is used, the method is correct if the 86 is their value, so the M1dep can be awarded.

M0M1depA0

Student response 3

Accuracy marks (B1)

'B' marks are accuracy marks that are awarded independent of method such as for measuring a line, stating a fact, processing a calculation on the calculator, giving explanations or reasons.

Example:

Mark scheme says:

	Murphy as their mode is the greatest at 24	B2
or	any correct mode	B1

Student response 1

Answer Murphy

No value for mode seen.

B0

Student response 2

24

Answer

Correct mode, but it is not attributed to Murphy.

B0

Accuracy marks (A1)

The 'A' mark refers to the mark given for the student's correct final answer. This means that if a student has made an arithmetic slip in their working, although they can potentially score all method marks, they cannot score the A mark. Obtaining the correct final answer without working will score full marks unless the mark scheme states otherwise.

Example:

Mark scheme says:		
	8.5	M1
	their 8.5 × 80 000 000 (÷ 1000)	M1
	680 000	A1

Student response 1

8.5×8000000

Answer 680000000

Correct value seen. Correct calculation used (but without the bracketed part). Answer is incorrect.

M1M1A0

Student response 2

Answer 680000

Correct final answers without working score full marks unless the question states "you must show your working" or "show that…".

M1M1A1

Student response 3

8.5

Answer 680000

Correct value seen. Calculation is then missing but answer is correct so full marks.

M1M1A1

Follow-through marks (A1ft)

Examiners will follow-through incorrect evaluations of correct calculations when awarding method marks. In this case, the only mark the student cannot obtain is the A mark for the correct final answer. The exception to this is if the scheme states A1ft. Here, the student could obtain the final mark in the scheme despite making a slip up earlier on. This is to prevent students from being penalised twice: losing a mark for an earlier step **and** losing the final mark. Note students cannot score full marks from an A1ft, unless the question is split into parts (a) and (b), where students who do not score full marks in (a) could potentially score full marks in (b).

Example:

Mark scheme says: 100 (°)   B1

$$\frac{\text{their } 100}{360} \times 54\,000$$ M1

15 000   A1ft   ft their 100

Student response 1:

$$\frac{100}{360} \times 54000$$

Answer   1500

100 is seen, and the method is correct.
1500 is incorrect.
                B1M1A0

Student response 2:

$$110° \qquad \frac{110}{360} \times 54000$$

Answer

16 500

The 110 is incorrect.
The method is correct for their value.
The answer is correct for their value.
                B0M1A1ft

Special case marks (SC1)

Special case marks (SC1, SC2) are in the scheme for incorrect final answers that imply the student followed a partially correct method. They can only be awarded if the scheme says so, and students either receive the special case mark(s) or method marks, whichever is greater. Examiners do not need to see any working to award special case marks.

Example:

Mark scheme says:	(20 − their 2) × 16 or 288	M1	
	their 288 − 240	M1dep	
	48	A1ft	SC2 for 80

Student response 1:

Answer 80

(20 − 2) × 16 M1
Answer: 80 is a special case (SC2).
Give the student the greater number of marks.
2 marks overall

Student response 2:

Answer 80

80 as final answer is worth SC2.

Misreads / Miscopy

Students often miscopy values from the question or from their calculator. Where an examiner believes a miscopy is genuine, all method marks can be awarded as usual unless the mark scheme states otherwise. The only marks the student cannot score are A or B marks.

Example:

Mark scheme says: $100 - (21.7 + 10.4 + 7.6 + 6.3 + 39.3)$ M1

                    14.7   A1

Student response 1:

$$100 - (21.7 + 10.4 + 6.7 + 6.3 + 39.3)$$

Answer   15.6

The 6.7 is a misread for 7.6. This is genuine since they have not made the question any easier for themselves so the method mark can be awarded as usual. They lose the A mark.

M1A0

Student response 2:

$$100 - (22 + 10 + 8 + 6 + 39)$$

Answer   15

All the numbers are rounded. This is not a misread. Do not award method marks for this, but it is possible they might score elsewhere.

M0A0

The use of brackets

Values or words shown in brackets in the mark scheme do not need to be seen to award the mark(s). However, if the student does show the value or words contained in the bracket, they must be correct otherwise they cannot score.

Examiners must apply some common sense to this rule; sometimes brackets are included to emphasise the correct order of operations in a calculation. In this case, the calculation contained within the bracket must also be seen. Sometimes values are given in squared brackets to indicate a range of acceptable values. For example [2, 2.75] means to accept values between 2 and 2.75, where 2 is included and 2.75 is not included.

Example:

Mark scheme says: 104	M1
$\dfrac{\text{their } 104}{40}$	M1
2.6	A1
(the mean for England is) 3(.0)	B1
Students in the year eat less fruit than students in England	B1

Student response 1:

$$\frac{104}{40} = 2.6$$

$$2.6 < 3$$

Students in the year eat less fruit

Answer than students in England

M1M1 awarded for the method.
A1 for the 2.6.
The sight of the 3 is enough for the first B1 mark, as the crucial part if having the 3.
Answer is correct B1.

       M1M1A1B1B1

Student response 2:

$$\frac{108}{40} = 2.7$$

Mean for England = 3

Answer

They have divided their value by 40 to get the second M1.
They can get the first B1 without the decimal place.

       M0M1A0B1B0

Simplification or conversion of a correct answer

In some questions, such as probability questions, once a correct answer has been seen, examiners ignore incorrect attempts at simplifying. The only exception is the use of ratio; if students write the correct probability fraction alongside a ratio they will not score.

Example:

Mark scheme says: $\dfrac{332}{600}$ or 0.55 or better or 55% or better   B2 (B1 sight of 332)

Student response 1:

$$\frac{332}{600}$$

Answer $\frac{1}{2}$

$\dfrac{332}{600}$ seen so their incorrect conversion does not matter.

    B1

Student response 2:

$$\frac{332}{600} = 52\%$$

Answer

$\dfrac{332}{600}$ seen so their incorrect conversion does not matter.

    B1

Student response 3:

$$\frac{332}{600}$$

Answer $332 : 600$

$\dfrac{332}{600}$ seen but conversion to a ratio always scores zero in probability.

    B0

Choice

If students use two opposing methods, mark the one leading to the answer on the answer line, ignoring all other methods. If no answer is provided, mark both methods and award the lower number of marks.

Example:

Mark scheme says:

$360 - 208 - 86$ or $66(°)$ M1

$$\frac{\text{their } 66}{208} \times 312 \qquad \text{M1dep}$$

99   A1

Student response 1:

$360 - 208 - 86 = 6.6^{\cdot}$

$208 + 66 = 294$

$\frac{294}{208} \times 312$

441

Answer

Two methods seen; mark the one leading to the answer on the answer line.
They have used their 66 (the 294) so M1dep only.
M0M1depA0

Student response 2:

$\frac{66}{208} \times 312$ or $\frac{208}{66} \times 312$

99   983

Answer

Two methods seen, no answer on the answer line. Mark both marks and award the lower number of marks.
No marks for the right-hand method.
M0M0depA0

Student response 3:

$\frac{66}{208} \times 312$ or $\frac{208}{66} \times 312$

Answer 99

Two methods seen; mark the one leading to the answer on the answer line.
99 comes from the correct method.
M1M1depA1

When to ignore the rules of choice

In the additional guidance section on certain questions the mark scheme states, for example, "Up to M4 may be awarded for correct work with no, or incorrect, answer, even if this is seen amongst multiple attempts", or in older mark schemes, "Allow M4 even if not subsequently used". These statements mean to override the rules of choice. Any correct values or calculations will be given marks, regardless of whether the student has incorrect methods and values present or uses these values to obtain their final answer.

Example:

Mark scheme says: $360 - 208 - 86$ or $66(°)$ M1

$$\frac{\text{their } 66}{208} \times 312$$ M1dep

99   A1

Additional Guidance: "Up to M2 may be awarded for correct work…"

Student response 1:

$$360 - 208 - 86 = 6.6$$
$$208 + 66 = 294$$

$$\frac{294}{208} \times 312$$

Answer 441

M1 for the 66.
M1dep for using the 294 in the fraction.
Answer is incorrect.
       M1M1depA0

Student response 2:

$$\frac{66}{208} \times 312 \quad \text{or} \quad \frac{208}{66} \times 312$$

$$99 \qquad\qquad\qquad 983$$

Answer

No answer on the answer line, but we are told to ignore the rules of choice.
Left-hand method scores M2.
       M1M1depA0

Correct answers from incorrect working

Where a student has clearly obtained correct values from incorrect working, the student will not score marks. This does not necessarily mean, however, that they will score zero for the question, since they may have written a correct calculation or another correct value elsewhere in their working. If it is not clear that the student has obtained correct values from incorrect working, give them the benefit of doubt and award marks as usual.

Example:

Mark scheme says: $\dfrac{9600}{960} \times 100$ M1

1000   A1

Student response 1:

$$960 + 40 = 1000$$

Answer   1000

1000 seen, but it is a fluke, as it has come from an incorrect method.

M0A0

Student response 2:

9600

Answer   1000

1000 seen and it is not obvious that this has come from an incorrect method. Benefit of doubt given.

M1A1

Work crossed out

If a student has crossed out their entire answer with nothing else written, mark it. If a student crosses out part of their answer, only mark the part that is **not** crossed out.

Example:

- Mark scheme says: The data is for one day only   B1
                               Take further samples on different days   B1

Student response 1:

Everything has been crossed out, so we can mark it as usual.
First reason seen.

B1B0

Answer

Student response 2:

Work has been crossed out and replaced. We cannot mark the parts crossed out.
Reason is incorrect.

B0B0

Answer

Poor handwriting or spelling

Apply a common-sense approach to poor handwriting or spelling. Examiners are on the student's side. If their working is correct but, for example, 168.4 looks like 108.4, give them the benefit of doubt and award the marks. Check through the rest of their script for other ambiguous 6s, for example, to help confirm what they have written.

Example:

Mark scheme says:

10.8×8 or 86.4	M1
$50 \times 110 \times 35$ or 192500	M1
their $192500 \div 1000$ or 192.5	M1dep (dep on 2nd M)
their $192.5 -$ their 86.4	M1dep
106.1	A1

Student response 1:

Answer _____ 106.1

86.4 seen M1
$50 \times 110 \times 35$ M1
192.5 seen M1dep
$192.5 - 86.4$ M1dep
Given the full method has been seen, apply benefit of the doubt on their 106.1
  M1M1M1depM1depA1

Student response 2:

Answer _____

Work is completely illegible.
  M0M0M0depM0depA0

Student response 3:

Answer _____

86.4 not clearly seen M0
$50 \times 110 \times 35$ M1
$192500 \div 1000$ M1dep
  M0M1M1depM0depA0

Graph questions

Mark schemes usually allow a $\pm\frac{1}{2}$ square leniency when plotting points and when joining points with a curve or line. This means that students are allowed to be up to $\frac{1}{2}$ small square out, in the horizontal or vertical direction (not diagonal).

Example:
The red cross indicates the exact location where a point should be plotted. The blue cross or line indicates the student's attempt.
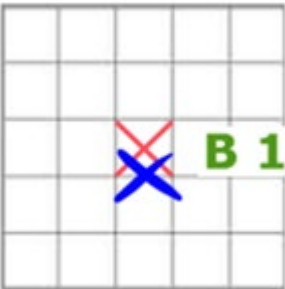
Student response 1:
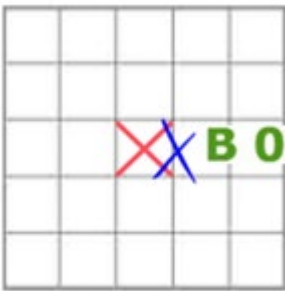
The blue cross is just over the $\frac{1}{2}$ square tolerance.

B0

Student response 2:

Part of the centre of the blue cross is within $\frac{1}{2}$ square tolerance.

B1

Student response 3:
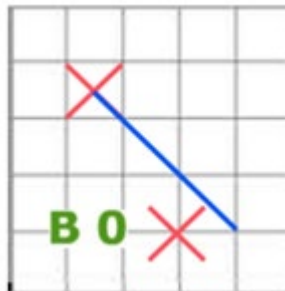
Vertically and horizontally, the blue line is one whole square from the cross so this is out of tolerance.
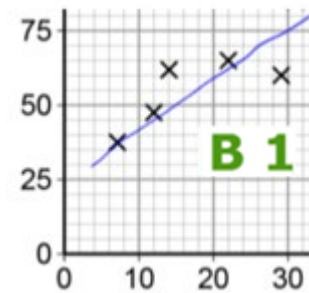
B0

No ruler

Examiners mark the student's intention. If a reasonably good attempt at a straight line is made without a ruler, we would accept it.

Example:

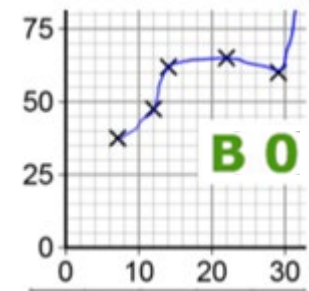Students were required to join a line of best fit through these points.

Student response 1:

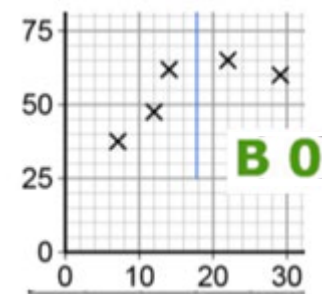The student's intention to draw a straight line of best fit is clear.

B1

Student response 2:

It is clear that the student did not intend to draw a single straight line.

B0

Student response 3:

The straight line of best fit is incorrect.

B0

If you want to learn more

If you'd be interested in joining our team of examiners then please check our website to see if there are any vacancies or to express your interest.