THIRD SPACE LEARNING

The Ultimate Edexcel GCSE Maths Marking Toolkit for Heads of Department

Evidence-based strategies, ready-to-use CPD materials, and examiner-informed insights to align teaching, marking and intervention to raise attainment and boost grades.

SLT Guides

THIRD SPACE LEARNING

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Examiner insight as a leadership tool

When school leaders know how Edexcel examiners award or withhold marks, they can direct staff training where it drives the greatest improvement in outcomes. It can increase attainment, enhance feedback, and allow for better grade prediction accuracy and outcomes.

Reliance on predictions or broad grade-boundary trends gives limited insight into how marks are actually earned. This toolkit analyses Edexcel's GCSE Mathematics marking conventions between 2017 and 2025, including pandemic-year anomalies, to show where students commonly lose marks and how departments can recover them through evidence-based teaching and assessment practice. It explains the full range of mark types and how they reflect examiner intent.

Understanding this enables leaders to embed mark-aware teaching at scale, ensuring lesson planning, marking and intervention all pull in the same direction, without adding to unsustainable teacher workload.

This paper aims to contribute to measurable leadership outcomes:

- **Improved internal-to-external grade alignment**
- **Fewer unawarded "easy marks" through missed method credit**
- **More consistent departmental marking standards**

Some sections of this article use illustrative marking exemplars and shadow problems. These are interpretations based on the information on the original Edexcel mark schemes and Edexcel examining documentation available online.

These do not represent official responses from Edexcel.

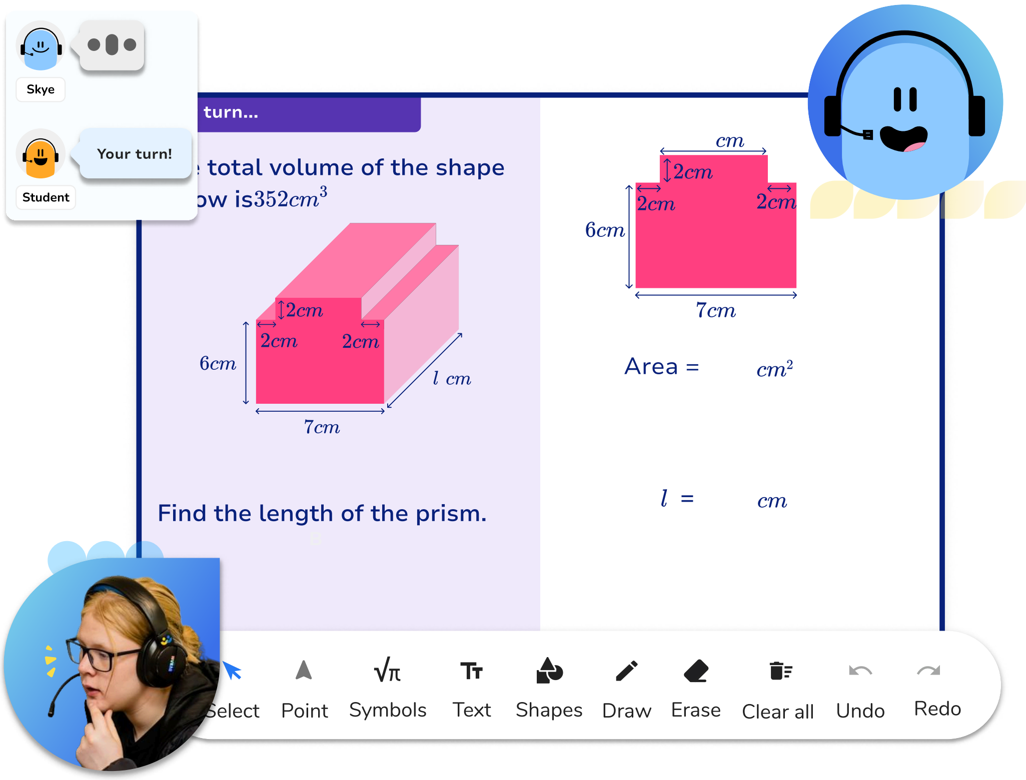
Insight through experience

At Third Space Learning, our mission has always been to make one-to-one maths teaching accessible, effective and evidence-based. Every year, our resident GCSE specialist and marker, Christine Norledge, analyses thousands of student responses to understand not only what students know, but how they show it. This distinction decides marks on a GCSE paper.

Here, she brings together classroom and marking experience with eight years of Edexcel GCSE maths data and mark schemes to provide leaders with clear, actionable insights that translate into raised attainment and grade improvements.

In sharing the patterns, conventions and classroom strategies that make the greatest difference to pupil outcomes, this toolkit aims to support school leaders in turning insight into measurable impact through fairer marking, more confident teaching and stronger results for every learner.

Our AI tutor, Skye, applies these same examiner-informed principles in every session. Lessons are designed to prompt students to verbalise reasoning, show full working and self-correct misconceptions, the very behaviours examiners reward. For departments, this means individual tutoring that reinforces classroom priorities, supports consistent methods, and scales high-quality feedback across cohorts.



Navigating this toolkit

This resource gives you practical advice and tools to prepare your department and students for success. Use the section below to navigate to the areas most relevant to your context.

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This section covers: Eight years of Edexcel paper data showing that more than half of all marks are for methods or processes, not final answers.

Why it matters: Method visibility and reasoning are the most efficient ways to lift grades quickly.

Use this to:

- Train teachers to model mark-earning steps
- Refine feedback around method and accuracy
- Reduce preventable mark loss in mock exams

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This section covers: A clear explanation of key marking codes and how they guide examiner decisions.

Why it matters: Consistent use of codes improves internal reliability, prediction accuracy and shared language across teams.

Use this to:

- Run short, high-impact CPD calibration tasks
- Share the one-page “Mark Scheme Decoder” poster
- Align feedback and moderation with examiner practice

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This section covers: Classroom strategies and departmental routines that turn examiner insight into visible mark gains.

Why it matters: Small, consistent habits recover marks without extra workload.

Use this to:

- Standardise exam technique across classes
- Reinforce reasoning and communication skills
- Build sustainable mark-earning routines through micro-CPD

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This section covers: A leadership framework for embedding consistency, moderation and shared standards across your maths department.

Why it matters: Aligned marking builds trust in data, fairness in assessment and confidence in teacher judgement.

Use this to:

- Run 15–20 minute live-marking calibration sessions
- Agree and record a departmental "marking stance"
- Embed CPD for new and existing staff

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This section covers: How to turn examiner-informed insights into sustained departmental improvement and measurable grade gains.

Why it matters: Marking literacy delivers rapid, cost-effective impact across attainment, accuracy and staff development.

Use this to:

- Plan a one-year improvement pathway for your department
- Measure progress through mark recovery and data alignment
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Appendix A: Illustrative marking code examples - sample responses showing how marks are awarded in practice.

Appendix B: Command words reference - visual guide to key GCSE maths command terms and expectations.

Appendix C: Skills for Exams and Beyond poster - printable summary of mark-earning habits for classroom display.

Appendix D: Classroom prompts - student-facing reminders for showing working, checking answers and communicating reasoning.

Appendix E: Exemplar resource pack.

> "Understanding how exams are marked is an incredibly important skill, even for non-exam markers. This resource is great in-house CPD for maths departments to support non-markers and teachers new to the profession or to teaching GCSE. Teachers who mark exam questions confidently can relay that knowledge to students and help them demonstrate mathematical understanding in their assessments, leading to better communication of mathematics and better mathematicians."
>
> **Martin Noon, Mathematics Education**
> Consultant, Edexcel Examiner and CPD Provider

> "Helping your teachers and students understand how examiners use the mark scheme is a great way of improving exam technique, and a powerful teaching tool as students practice how to effectively set out and clearly structure their thinking. This resource provides deep marking insights in an accessible way to help your students pick up marks in the exam and to ultimately become better mathematicians"
>
> **Paul Coffey, Third Space Learning,**
> AI Curriculum Lead

Where the marks really are

More than half of all GCSE maths marks are for methods, not answers. For leaders, this means the fastest route to helping students achieve a better grade is ensuring they show full working and creditable methods.

When departments teach and mark with examiner intent, the effect is immediate and measurable.

Analysis of Edexcel Foundation and Higher papers from 2017–2025 shows that more than half of all marks are for method or process. This means the majority of marks do not depend on the final answer but on whether the student's reasoning is visible and mathematically valid.

Key findings:

- **Showing full working** is the most effective way to avoid mark loss.
- Implied methods can gain credit, but **missing or ambiguous steps often forfeit all marks** for a question.
- Unsupported correct answers on multi-mark items generally score 0 if the question requires working.
- **Contradictory working cancels accuracy marks**, even when the final number is correct.
- Misreads earn method marks only if the misread doesn't simplify or alter the question's demand.

These patterns reveal why non-examiner teachers sometimes underestimate or over-credit responses. A departmental focus on method visibility can recover a significant proportion of marks without altering curriculum coverage.

Highlight to students that clarity, structure, and visible reasoning are as important as final answers for maximising marks.

For teachers, it's key to explicitly model mark-earning steps. Training should therefore address both:

- **Pedagogy:** how to model and prompt method visibility.
- **Assessment:** how to recognise and credit it.

Later sections explore the wider implications of these mark types for classroom practice and departmental assessment policies in more depth.

Skye's tutoring model operationalises this automatically: each one-to-one session guides pupils to verbalise reasoning, show working aloud and correct misconceptions before proceeding, directly reinforcing the same behaviours examiners reward.

Exemplar problem

To illustrate some points in this section further, we have used an exemplar question shadowing June 2023 1F Q29; the question and mark scheme are as follows:

Work out the value of $\frac{3^{-2} \times 3^5}{3}$

……………………………………

Total 2 marks

Answer	Mark	Mark scheme
9	M1	for simplifying using a correct rule of indices as a first step e.g. $3^{5-2}(= 3^3 \text{ oe})$ or $3^{-2-1}(= 3^{-3} \text{ oe})$ or $3^{5-1}(= 3^4 \text{ oe})$ or $\frac{3\times3\times3\times3\times3}{3\times3\times3}$ or 3^2
	A1	cao

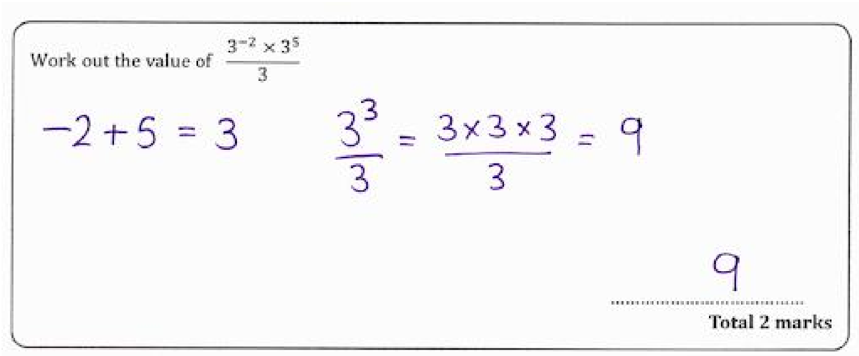
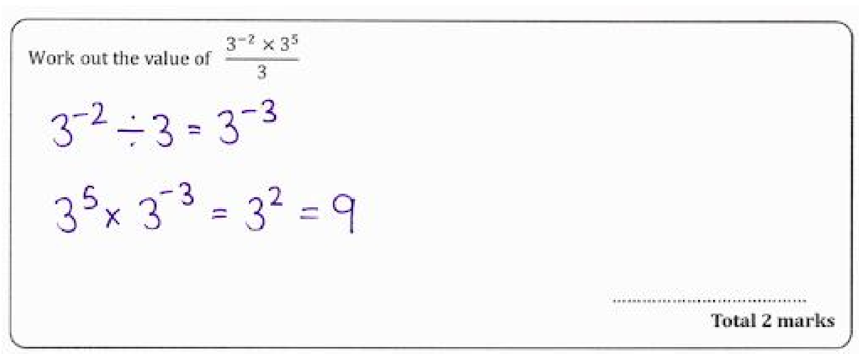
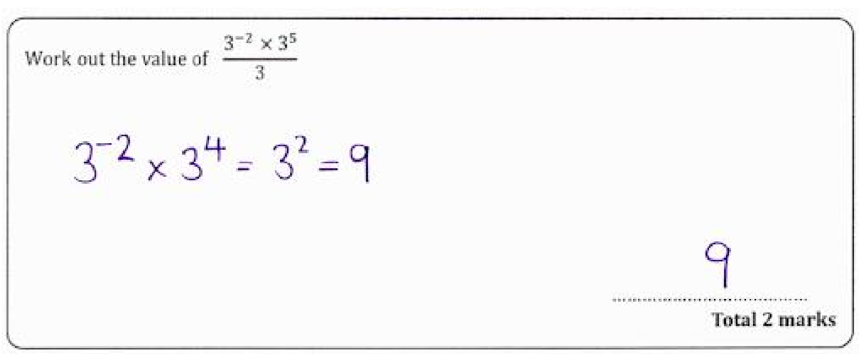
Method and process marks

Method and process marks are functionally equivalent. Edexcel use process marks in AO3 questions instead of method marks.

The letter P is used to remind examiners that they are looking for processes. Rather than a specific method, candidates will use a variety of valid alternative processes to arrive at the same correct answer.

While the mark scheme tends to only list the most frequently used methods, any valid method that leads to a correct answer is credit worthy.

Three correct responses using different methods

 Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$ $-2+5=3$ $\quad \frac{3^3}{3} = \frac{3\times3\times3}{3} = 9$ 9 Total 2 marks	M1 Sight of 3^3 tells us that the candidate has simplified the numerator using the multiplication law for indices. A1 Correct answer.
 Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$ $3^{-2}\div 3 = 3^{-3}$ $3^{5}\times 3^{-3} = 3^{2} = 9$ Total 2 marks	M1 Division law is used correctly as a first step. We also have 3^2 clearly shown. A1 The answer has not been transferred to the line, but it's clear that the response stops here, and 9 is their final answer.
 Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$ $3^{-2}\times 3^{4} = 3^{2} = 9$ 9 Total 2 marks	M1 They've used division as a first step correctly. Again, we can also clearly see 3^2, so we can award M1. A1 Correct answer.

Unless the question states otherwise, **method marks can be implied from a correct answer.** Mark schemes often take this into account with expected intermediate values that can imply method.

Often, rounded brackets indicate these correct answers; for example, the third candidate's response shows us 3^4, which appears in brackets on the mark scheme and implies a correct first step: division of indices.

Within reason, **inaccurate recording of the method is condoned**, provided the answer implies that the student has **completed the correct calculation.**

For example, if an intermediate step in a question requires a candidate to calculate 5 – 8 (= –3), and they instead write 8 – 5 = –3 and go on to use this correctly in the context of the question, this poor recording can be ignored.

Accuracy marks

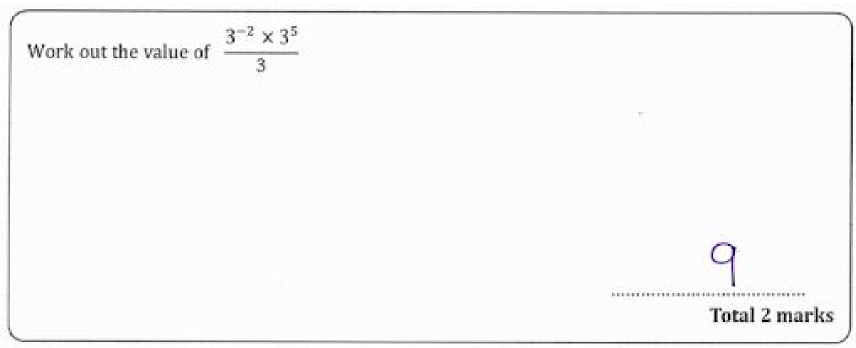
Accuracy marks are not "answer marks" and are only awarded following a **correct method or process**. They cannot be awarded without at least one previous M or P mark, and sometimes depend upon a particular number of M or P marks awarded first, or implied.

Unconditional accuracy marks ("B marks") do not require awarding of M or P marks. Often, they are given for **selecting correct data or key facts** from a question, or in simple questions where the method and answer aren't easily separable. For example, in the one-mark section at the start of Edexcel's Foundation papers.

Unless the question states otherwise, a fully correct answer with no contradictory working implies the correct method has been used, and full marks may be scored.

This is discussed further below, in the section "Showing Working". However, you may not want to highlight this principle to your students.

A correct answer implies correct working


Work out the value of $\frac{3^{-2} \times 3^5}{3}$

9

Total 2 marks

M1 A1
This response gets full marks.

Correct answer implies correct working (if nothing to contradict), and the question has not asked for working to be shown.

Showing working

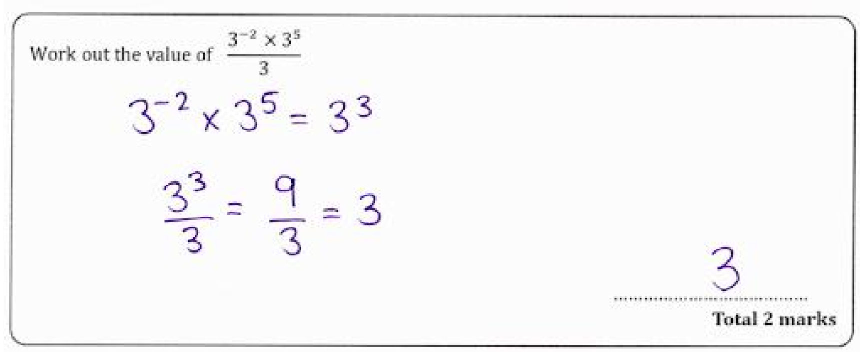
For questions that do not ask candidates to show all working, or similar wording, a correct answer gets full marks, even if it is the only thing written in the question.

If there is no contradiction in working, a correct answer implies that the correct method has been used. Method or process marks are awarded, and the accuracy mark follows.

Showing working for all questions is generally good practice at all times, as candidates can pick up method or process marks, even when accuracy marks are lost.

This is discussed further in the section on Implementation Tools.

Two incorrect responses with different levels of method shown



Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$

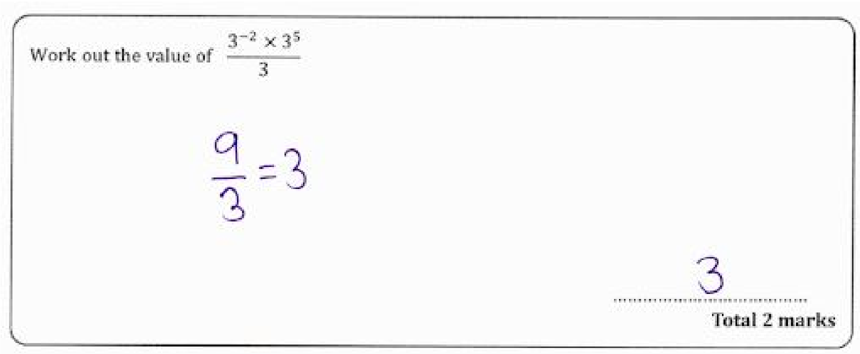
$3^{-2}\times 3^{5} = 3^{3}$

$\frac{3^{3}}{3} = \frac{9}{3} = 3$

3

Total 2 marks

M1 A0
This candidate has incorrectly simplified indices to 3^3, but they have shown a correct evaluation of indices to gain the method mark.



Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$

$\frac{9}{3} = 3$

3

Total 2 marks

M0 A0
This candidate has likely made a similar error, and their 9 could come from evaluating 3^2.

However, they haven't shown this as required, so there is not enough to award M1.

If a question asks candidates to show working, they **must** show their method to gain any credit. An unsupported answer will get no marks, even if it is correct.

Often, this phrasing is seen in multi-step calculation problems, such as best buys, where the final accuracy mark is for selecting an option from the question.

Requiring candidates to show working stops the practice of guessing an answer for a potential gain of 4-5 marks.

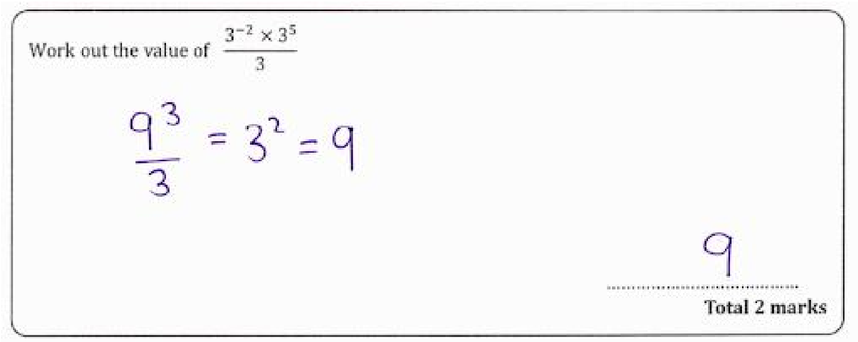
Right answer, wrong working

A correct answer with contradictory or incorrect working gets no marks. Incorrect working means that the method or process mark cannot be awarded, and therefore, neither can the accuracy mark.

Occasionally, situations arise where multiple candidates use the same incorrect processing to arrive at a correct answer.

The examiner's report for summer 2023 explicitly noted this about the shadow exemplar question used in this section. Due to the many incorrect correct responses, the report said: "whilst 4^2 was a common answer, it was often derived from incorrect working […] gaining no credit".

A "correct" answer from incorrect working


Work out the value of $\frac{3^{-2} \times 3^5}{3}$

$\frac{9^3}{3} = 3^2 = 9$

9

Total 2 marks

M0 A0

The answer looks "correct" at first glance. However, this candidate has incorrectly multiplied the bases: $3^{-2} - 3^5 = 9^3$.

No method mark is awarded, and therefore, the accuracy mark cannot be awarded either.

Exam boards try to avoid setting questions with this type of answer; problems are checked to ensure students can't get the correct answer by indiscriminately multiplying together all the numbers in the question, for example. However, sometimes these things do fall through the net, as demonstrated above!

Additionally, **examiners are not allowed to guess what a candidate's intermediate steps are** if they are not written. Examiners must not make judgements about whether they think an unsupported answer is just a guess.

Minimal method, but a full-credit response

Work out the value of $\frac{3^{-2} \times 3^5}{3}$

$3^2 = 9$

9

Total 2 marks

M1 A1

This response is stated on the mark scheme.

It's not explicit how the candidate arrived at 3^2, we cannot make assumptions about the validity of their reasoning. Full credit is awarded.

Misreads

It can be difficult to quantify exactly when it is appropriate to mark a question as a misread. Edexcel asks all its examiners to send potential misread cases for review by a senior examiner.

However, the essential principle is that method and process marks may be awarded for misreads in questions where the misread has not simplified or changed the question.

A simple transposition of values, e.g. using the number 241 instead of 214 from question data, would likely qualify as a misread. Conversely, if the question required identifying and using a correct value from a table of data, the question is likely to be partially testing data selection. A misread would not apply.

A possible misread

Work out the value of $\frac{3^{-2} \times 3^5}{3}$

$\frac{3^{-2} \times 3^6}{3} = \frac{3^4}{3} = \frac{3 \times 3 \times 3 \times 3}{3} = 27$

27

Total 2 marks

This response would likely be marked as a misread, M1A0.

The candidate misread the 5 for a 6, but has carried out the calculation correctly using their misread figure. The difficulty of the question hasn't changed.

Communication marks

Communication marks are awarded in questions where candidates are required to **provide a statement, explanation or demonstration of reasoning**.

In some cases, the mark scheme may require a **particular word or phrase** in the explanation, these are underlined for markers on the mark scheme. This commonly indicates a minimally acceptable responses in Geometry problems.

In other cases, the mark scheme may detail "acceptable" and "not acceptable" examples to guide examiners in deciding whether a response is sufficient. We can see this in the exemplar question below, which shadows November 2024 2F Q8a. Exemplar responses are given in the resource pack in Appendix E.

Layla says that 12 is a square number because $6^2 = 12$

(a) Is Layla correct? Give a reason for your answer.

....

....

....

Total 1 mark

Answer	Mark	Mark scheme
No and reason	C1	No and reason **Acceptable examples** No, because $6^2 = 36$ **or** $6^2 = 6 \times 6$ $3^2 = 9$ and $4^2 = 16$ so 12 is not a square number Layla is wrong because $\sqrt{12} \neq 6$ **or** $\sqrt{12} = 3.46 \ldots$ Incorrect because 12 is 6×2 not 6×6 No, she multiplied by 2 instead of squaring **or** 6^2 is not 6×2 Wrong as she added instead of multiplying **Not acceptable examples** Yes ... No, because 12 is 6×2 Incorrect because 12 is not a square number No because 6^2 is not 12 No because she added No because a square number is when a number is multiplied by itself

Edexcel mark scheme decoder

Edexcel mark scheme codes

Marking codes are consistency tools. When every teacher understands coding conventions in practice, internal mock marking and departmental feedback becomes examiner-aligned.

This alignment creates more reliable grade predictions, better student feedback, and a shared professional language across the department. Additionally, internal assessments become:

- Predictive
- Reliable
- Comparable

Supporting non-examiner teachers

Departments often underestimate how differently individual teachers apply these conventions. Some teachers such as ECTs, non-specialists, or teachers who have taught under a different exam board, may need additional support.

This inconsistency impacts:

- Predicted grades
- Student confidence
- Comparative data between classes

Mark schemes are not only assessment tools, they're training frameworks for teaching and marking consistency. To increase accuracy and consistency, embed short, structured CPD sessions that use these codes and real student work.

Below is a summary of the key codes and their implications.

For a more in-depth, illustrative understanding of the abbreviations and how to use them within department CPD, see Appendix A.

Abbr.	Meaning	Examples	Leadership insights
ISW	Ignore subsequent working	• Further rounding on an estimated answer • Incorrect simplification of a correct ratio • Incorrect conversion from improper to mixed • A non-example of ISW may include an algebraic term simplified correctly but then simplified further incorrectly - this would not be ignored.	Ensures students aren't penalised for continuing beyond a correct answer. Teachers should train pupils to stop when confident; teach staff to recognise valid stopping points.
CAO	Correct answer only	• Answers to arithmetic calculations • Algebraic simplifications • Context-based problems which yield an exact value as an answer	Clarifies where only a precise answer is rewarded, useful for moderation of arithmetic and accuracy-focused questions. Reduces over-crediting.
OE	Or equivalent	• Answers which could be given as a fraction, decimal or percentage • Fraction or ratio answers where the question does not ask for a full simplification	Promotes flexible marking; teachers must recognise equivalent fractions, ratios or decimals. Good for ECT training in applied contexts.
FT	Follow-through	• Reading information from a graph that the candidate has drawn themselves (e.g. scatter, cumulative frequency) • Questions worth 4-5 marks with an intermediate accuracy mark (in-depth problem-solving or long processes)	Allows for method credit when earlier parts contain slips; builds fairness and realism into marking. Departments should agree when to apply FT during mocks to maintain consistency.
SC	Special case	• Not awarded on a topic-specific basis	Highlights exceptions added after examiner review. Staff should treat SCs as non-transferable, not general allowances.
DEP	Dependent	• Problem-solving questions where the accuracy mark is dependent on partial or full award of process marks • Follow-through marks with additional criteria, such as awarding ft marks for graph plotting based on a candidate's derived value in an earlier part of a question	Train staff to recognise when a final answer depends on correctly completing previous steps. If DEP is misunderstood or ignored, teachers risk inflating marks by rewarding unsupported answers that show no evidence of valid reasoning.
INDEP	Independent	• Point plotting or identifying geometric features • Annotating or drawing diagrams • Self-contained processes that are part of a larger question - for example, carrying out a currency conversion in a best-buy	Training staff to spot INDEP opportunities increases fairness in marking and ensures pupils are credited for every valid piece of work.
AWRT	Answer which rounds to	• Mensuration problems, particularly involving circles • Pythagoras and trigonometry • Compound interest, growth and decay	Clarifies rounding tolerances (e.g., 3 s.f. or 2 d.p.). Reinforces consistent expectations for calculator use and accuracy.

Practical departmental mark scheme strategies

1. Create a one-page Mark Scheme Decoder poster to display in the maths office.
2. Use live-marking calibration tasks in department meetings.
3. Encourage staff to annotate mock papers using these codes.

Edexcel marking: decoded

Ignore subsequent working

Examiners are asked to ISW on some questions where candidates have continued beyond the correct answer and potentially spoiled their work at this point.

ISW often appears in questions when a specific answer format is not requested, e.g. mixed or improper fraction, simplified fraction or ratio.

Conversely, if candidates are asked for a specific format and this is ignored or incorrect, this usually results in a loss of an accuracy mark. For example, ISW may not apply if a candidate simplifies an algebraic term correctly but then simplifies it further incorrectly.

Correct answer only

CAO appears frequently on Edexcel mark schemes. It indicates to examiners that an accuracy A or B mark should only be given if the candidate has the correct response as written on the mark scheme.

Or equivalent

OE indicates that full credit may be given for equivalent answers where the question rubric does not require an answer in a particular form. For example, giving a decimal instead of a fraction, or only partially simplifying a fraction (as in Example 1).

Follow through

A follow through mark is indicated with ‘FT’ appearing after the marking code. For example, A1 FT. These are written on the mark scheme in places where a single error would cause a cascade of further mark loss if the question were marked strictly.

In addition to appearing in some high-mark problem-solving questions, **follow through marks are also frequently leveraged in questions with linked parts.** For example, part b required the use of a value that candidates had calculated in part a.

A commonly occurring example is the use of a probability tree or frequency tree. Candidates are often asked to complete the diagram in part a, then use their diagram in part b to calculate a probability.

This is frequently seen in many circumstances where candidates are either:

- Asked to read from their drawn graphs, both statistical and algebraic,
- Or, use a derived algebraic result to make a further calculation, such as equations of proportionality.

Communication marks are sometimes followed through. If a candidate made a correct conclusion using their incorrect previous value, credit may be given, depending on the question.

Some follow-through marks have attached conditions. For example, awarding the mark for reading solutions to a quadratic from the candidate's drawn graph may require the graph to look like a quadratic (single turning point, etc).

This avoids giving marks for things which are mathematically incorrect, rather than as the result of an arithmetical slip. See Example 2 for further discussion of these ideas.

Special case

Special case marks - usually denoted SCB1, SCB2, etc - apply to cases where credit-worthy responses would otherwise score zero if marked per the mark scheme.

Often, these special cases are added after candidate responses to questions are available to examiners. They may take frequently occurring (reasonable) incorrect responses into account. Usually, they are only given for specific values or responses, and cannot be subdivided for partial credit (see Example 1).

For this reason, **special case marks can be unpredictable** - just because an SC was given for one type of question in one year, it does not mean that every question of this type will have SC marks going forward.

Consequently, some departments choose to ignore special cases when marking mock exams.

Dependent and independent marks

A dependent mark, DEP, can only be awarded if specific mark(s) were awarded earlier in the question. Dependent marks can be attached to any type of mark, and they serve to prevent awarding credit where key prior steps are missing.

Examiners may use dependent marks to add conditions to follow-through marks. For example, in a parted question, a follow-through mark in part b may be conditional on at least one mark awarded in part a.

Independent marks, INDEP, however, are not conditional on prior marks. They can be awarded stand-alone, even if earlier marks were lost. These are more commonly attached to B or C marks.

This marking code tolerates answers that are not exact, from problems such as mensuration, trigonometry, compound growth and estimating the mean.

Answer which rounds to

The coding AWRT nearly always appears on numerical final answers involving decimals, and is predominantly used on the calculator papers.

In many cases, the **chosen level of accuracy is three significant figures**; candidate's responses must agree with the response in the mark scheme when correct to 3sf.

Rounding inaccuracies often creep in when candidates round prematurely while still working. Teach students to use either the memory function or the previous answer button (ANS) to use an unrounded decimal in subsequent calculations.

Encourage recording a sufficient number of decimal places or significant figures for all intermediate values.

Inverted commas

Inverted commas usually appear in longer-form questions or those with method/process marks available - they allow for arithmetical slips in working.

Anything in inverted commas must come from a correct method or process, and can't just be "made up".

Inverted commas and dependency marking mean that it's generally a waste of time to encourage students to make up values to demonstrate partial understanding, or to "make up" a part (a) to use in part (b).

Generally, follow-through values must have some basis in a relevant mathematical process.

Ready-to-use implementation tools

The most effective improvement strategy isn't re-teaching content, it's training students to demonstrate what they already know in ways examiners can credit.

By embedding a small set of visible, high-yield habits across every classroom, leaders can raise grades across a cohort without adding content, workload, or hours.

Edexcel's marking data shows that many marks are recoverable through consistent exam behaviours.

These habitual, transferable routines can be modelled, practised, and standardised across classrooms.

Departments that build these routines school-wide see two outcomes:

1. **Immediate grade lift** through reduced avoidable mark loss.
2. **Improved consistency** in how students communicate reasoning and method.

The following tools represent high-impact, low-effort ways for departments to build mark awareness into daily teaching and revision.

High-impact protocols

Here you'll see the hardest-hitters for exam success. While there are no real surprises, you can use the tools in this section to support staff and students.

The strategies listed here cultivate problem-solving techniques and structured thought processes that extend beyond the classroom.

Skills such as reasoning logically, representing situations mathematically, and communicating solutions transfer to other subjects and real-world contexts.

These are skills that should be developed throughout your curriculum pathway - they can't be "taught" as a bolt-on in Year 11.

Broadening these skills beyond simple exam technique and selling the wider transferable nature to students is one way to increase buy-in beyond just obtaining an exam grade, particularly to those students who don't wish to pursue a maths-based subject beyond GCSE.

1 Show full working

While candidates can receive full credit for some questions for just providing a correct answer, this is a risky strategy.

Encouraging students to show full working for each question ensures that they will not miss opportunities to gain method marks.

Over half of the marks on GCSE exam papers are for showing a correct method or process. This is the single highest-impact strategy for increasing mark gain, and feeds into so many of the other protocols listed below.

Transferable skills

- Builds structured, logical thinking.
- Promotes clarity in communication.
- Clear, structured working is required in professional fields such as law, business and healthcare.

2 Set up an equation or representation

This is the foundational step for multi-mark questions. The process of translating the words within the question into a mathematical model, representation or equation often demonstrates the candidate's knowledge of the correct method, and usually gains the first method or process mark.

Transferable skills

- Develops the ability to model complex situations.
- Encourages planning for efficient problem-solving; key to managing projects or developing new ideas.

3 Highlight key information within the question

This protocol is linked to setting up the first step in multi-mark questions, and ensures accuracy marks are not lost due to incorrect substitutions.

Encourage candidates to write or annotate key information from the question in their own way, demonstrating to the examiner that they can identify what is important in answering the problem set.

At GCSE, it is extremely unusual for a question to contain extraneous information, particularly at Foundation level.

Strategies such as ticking off or marking information within a question once it has been used in a solution can help students recognise when they have their final answer. If they have not used a piece of information from the question, they probably haven't finished!

Transferable skills

- Strengthens critical reading and the ability to filter information, deciding what is important to solve a problem.
- Encourages attention to detail and improves task prioritisation skills.

4 Check that the final answer is in the required form, including rounding

This protocol is linked to setting up the first step in multi-mark questions, and ensures accuracy marks are not lost due to incorrect substitutions.

Encourage candidates to write or annotate key information from the question in their own way, demonstrating to the examiner that they can identify what is important in answering the problem set.

Transferable skills

- Reinforces important self-review habits, including checking for precision and accuracy.
- Develops quality assurance skills relevant to further study, business and the workplace.

5 Annotate diagrams, graphs and charts

When working on Geometry or Statistics questions, there are often unconditional B marks available for placing key information. For example, plotting a coordinate, drawing a line, adding information to a Venn diagram or identifying simple missing angles in an angle reasoning problem.

This is often a useful way to start a multi-step problem, particularly if the candidate is unsure of what method(s) to use.

Examiners can credit work that appears on a diagram, provided that it is not contradicted on the answer line.

This strategy, while effective exam practice for both Foundation and Higher candidates, tends to yield more marks at the Foundation level due to the lower general demand of questions.

Transferable skills

- Develops skills with visual representation of information, a key skill in presentation, design work and business analytics.
- Improves confidence in expressing ideas visually and verbally.

6 Check units and conversions

Units are frequently given at the end of many problems, and there are very few marks available for simply getting the units in a question correct.

However, there is an expectation that, when candidates work with time, money or measurements, they can work flexibly and without errors. Final answers should be given in the appropriate format.

For example, mark schemes for money problems generally allow candidates to work with mixed pounds and pence while carrying out calculations, but penalise errors due to inconsistent notation quite heavily. These problems may also carry a communication mark for an answer given using correct money formatting, rather than a standard accuracy mark.

Checking units and conversions has a higher impact for Foundation candidates, due to the more frequent use of real-life contexts and problems involving time, money and measurement.

However, it is still important for Higher candidates, and it mitigates the loss of some easier marks.

Transferable skills

- Strengthens numeracy skills for real-world contexts such as budgeting.
- Encourages contextual awareness and “sense-checking” of answers.

Exam technique

These strategies focus on exam-specific behaviour, and when applied consistently can add at least one or two marks per paper.

They are easy to model, quick to practise, and measurable in book looks or lesson observations. It's good to push these in the final weeks when even a couple of marks matter.

1 Strategic pacing

This will vary considerably depending on the target grades of your class and cohort. Generally, a mark a minute remains a good frame of reference, allowing ten minutes for checking work at the end.

Encourage students to use the number of marks as an indicator of how much time they should spend. If they're still on a one-marker after two or three minutes, move on and come back.

2 Decode the command word

Familiarising students with actively reading the command word at the start of a question can minimise careless mark loss. For example, if a question asks candidates to "work out the value", their final answer should be numeric, and if it isn't, it's unlikely to gain full credit.

3 Sense-check answers at the end

Ensure that answers are sensible, e.g. areas or volumes are positive quantities, that a recipe doesn't call for 70,000 kg of flour or that the distance between two cities isn't 15cm.

4 Scan for blanks

A blank question is an automatic zero. However, guessing indiscriminately should be the last resort, and only really worth it on lower-tariff questions.

On multiple-mark questions, encourage students to use information to make a sensible first step rather than wasting their time just writing a "guess".

5 Use a calculator when possible

Using inefficient non-calculator methods on Papers 2 and 3 wastes time and can result in errors. The tolerance for arithmetical slips on the Calculator papers is significantly lower than on Paper 1.

An easy way for students to record their method on the Calculator papers is to also record on the page anything that they type into their calculator screen.

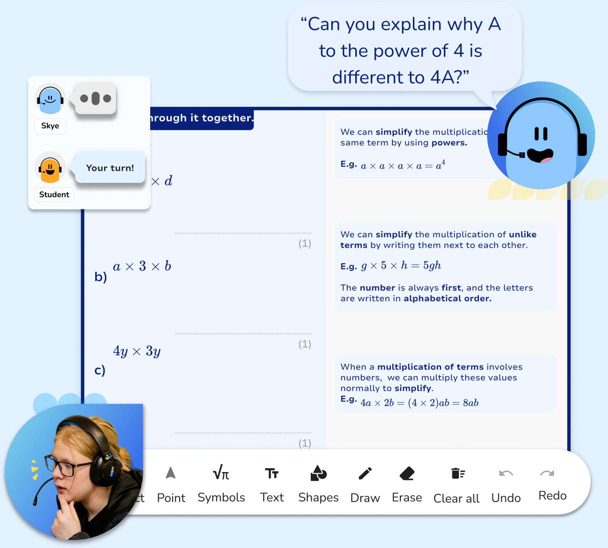
Using the memory function or storing intermediate results can help avoid rounding errors and subsequent loss of accuracy marks on higher-tariff problems.

6 Substitute, then simplify

Generally, students make fewer errors when rearranging expressions containing mostly numbers compared with expressions with a high number of algebraic terms.

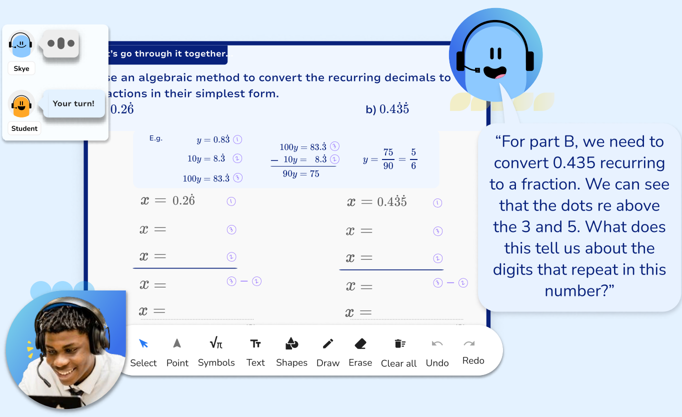
Additionally, marks may occasionally be available for the correct substitution of information from the question into an expression.

How Skye embeds good exam technique



Skye's tutoring approach is built around the same examiner-informed mark taxonomy:

- Every step is verbalised and checked for method clarity.
- Unit, rounding, and communication prompts replicate examiner feedback.



Its one-to-one sessions train pupils to use mathematical language accurately, and apply structured methods, reinforcing departmental standards at scale.

This means Skye acts as a practice multiplier, reinforcing exam habits beyond the classroom while saving staff time on individual intervention.

Building a consistent departmental marking culture

Consistency in marking and feedback is a leadership responsibility, not just a teaching skill. Even small differences in how teachers apply mark schemes can distort internal data, weaken intervention targeting, and inflate grade predictions.

Establishing a shared "marking culture" across the department delivers one of the highest returns on CPD investment: fairer assessment, more reliable data, and improved pupil outcomes.

Most mathematics teachers develop a good intuitive sense of how GCSE questions are marked. However, research and departmental moderation often reveal a confidence–consistency gap:

- Teachers who haven't formally marked for an exam board tend to **under-credit method marks and over-credit final answers.**
- Non-standard methods or misreads are applied inconsistently.
- Variations in applying follow-through (FT) and dependent marks (DEP) can **change final grades by as much as a full boundary**.

This variability makes it difficult to compare results across classes or cohorts and can misdirect intervention resources.

The leadership solution is not to replicate full examiner training, it's to create a lightweight, repeatable calibration process that keeps every teacher aligned with exam-board intent.

Micro-training and calibration

Leaders can embed this through regular, high-impact sessions that take 15–20 minutes in department meetings.

Here is a suggested format:

Stage	Focus	Example activity	Leadership outcome
1. Select	Choose one or two multi-mark questions from a recent mock or past paper.	E.g., “Best buy” or “indices” question worth 3–5 marks.	Creates a shared reference point.
2. Live-mark	Teachers mark 3–5 anonymised answers individually using Edexcel codes.	Include deliberate borderline cases.	Surfaces differences in judgement.
3. Compare & discuss	Review outcomes, debate borderline decisions, and agree on criteria.	Capture on a shared document. Lean in to those who are qualified markers.	Builds a unified interpretation of mark schemes.
4. Record & apply	Document agreed marking stance, particularly borderline responses, in a short summary.	Add to departmental handbook.	Ensures consistency for future mocks.

Repeat this process 3–4 times a year after autumn, spring, and summer assessments, particularly during mock marking and longer form questions. Store exemplars for new staff induction.

This provides sustainable CPD that compounds over time and provides a straightforward way for any teacher-examiners to share their insights while allowing non-marker teachers to develop confidence in their judgement.

Agreed marking stance

Once calibration is in place, departments can formalise their stance on key marking scenarios. Departments may apply different approaches for mock assessments, usually to reinforce key exam habits and prevent overconfidence in students.

Small deviations from the official mark scheme can be valuable when used deliberately to develop strong exam habits. However, these decisions should be made at the department level so that expectations are clear, marking is consistent, and students receive the same message in every class.

For example, while you can award a correct answer with no method full marks (depending on the question), a department may decide to mark most or all answer-only responses more harshly. This reinforces to students the fundamental practice of showing a method for every question.

Departmental policy and consistency means that mock assessment results are more comparable between classes.

Here are some scenarios where deviation from the mark scheme may be appropriate. While there is no “correct” way to deal with each of these, and adaptations will vary depending on setting and cohort, this list provides a useful starting point for discussions within your department.

Scenario	Official marking	Suggested departmental adaptation	Rationale for leaders
Answer-only responses (multi-mark)	Full marks allowed if correct, no contradiction and does not ask for working to be shown.	Mark strictly to reinforce “always show working” habit. Students are unlikely to consistently correctly identify situations when they must show working to gain credit.	Reinforces method visibility as a default behaviour.
Choice of method or answers given.	If there is no answer on the answer line, mark both responses and award the lower mark.	Allow discussion post-marking but award lower mark. Double-marking a question is time-consuming for teachers. This type of marking may encourage students to “hedge bets” on questions they are unsure of, and waste too much time on one problem.	Prevents over-marking and wasted time.
Minimal reasoning for communication marks (e.g. angle reasoning)	The underlined portion indicates the absolute minimum required for credit.	Require complete reasoning to encourage written fluency.	Improves mathematical communication across cohorts.
Non-standard method that is not covered by the mark scheme.	Any valid method that leads to a correct answer should be credited.	While examiners should look for and credit non-standard methods, these can be missed, particularly when the result is an incorrect answer. Teachers may be inclined to award credit based on what they believe a student can do, rather than what is demonstrated on paper.	Improves mathematical communication across cohorts.
Follow-through marks (FT)	Credit if method consistent with earlier error.	Checking every follow-through is time-consuming. Make it optional depending on the assessment. Marking follow-throughs as correct contradicts the message to students that accuracy and precision are crucial.	Maintains control over grade accuracy.
Special cases (SC)	Credit per mark scheme only.	Special case marks are not guaranteed. Omit SC credit in internal mocks to avoid overprediction. SC marking can sometimes be interpreted as “any alternative method” when it is a very clearly defined exception that cannot be deviated from.	Keeps data realistic.
Misreads	Misreads may obtain credit, but all cases are sent for review	Award of misread marks follows strict, narrow criteria that non-examiners may misinterpret. Treat as non-credit for consistency and rigour.	Emphasises accuracy under exam conditions.
Notation (e.g. algebra, operations, FDP and ratio problems)	Allowed deviations from standard notation are stated.	Deviations are fairly standard but not guaranteed. Students are unlikely to consistently correctly identify situations where non-standard notation is condoned.	Ensure clarity and consistency to avoid ambiguous errors.

Communication with students: making it visible

Leadership teams should ensure staff communicate these marking expectations to students, but framed as behaviour-driven general principles, rather than strict lists of criteria for particular types of questions.

For example:

- Include mark visibility checks in low-stakes quizzes.
- Add student versions of mark-scheme codes (M = method, A = accuracy) to feedback.
- Model examples and highlight which steps correspond to the method/process or answer marks, and how to gain these marks.
- Distribute the "**Skills for exams and beyond" poster (**Appendix C**)**.
- Include command word charts and exam-check routines in classrooms.

Show Full Working

Why it matters: Over half the marks on your exam papers come from methods or processes.

Steps to success:

- Write every calculation step clearly.
- Record calculator inputs.
- Annotate working to signpost key steps.
- Use correct symbols.
- Circle or box the final answer once it's complete.

Remember: Examiners can only mark what they can see.

Real-life skill: Communicating reasoning clearly

Check Your Answer

Why it matters: Marks are often lost for incorrect rounding, units, or answers that don't make sense.

Steps to success:

- Read what the question asks for (decimal places, significant figures, units).
- Check units and keep them consistent.
- Ask whether the final answer looks reasonable (realistic size/cost, positive answers for lengths, areas and volumes).
- Make sure the final line of your work matches what's required.

Remember: A correct calculation can still lose marks if it's in the wrong format.

Real-life skill: Quality-checking and proof-reading

The goal is for students to internalise the connection between how they present their work and the marks they receive.

CPD tips

- Use live student work examples for instant relevance.
- Build a "Mark-Earning Habits" wall or digital board in the maths office.

Successful implementation

In order to embed marking expertise fully you'll need a clear, sustainable departmental structure that includes the following:

1 Reusable CPD packs

- Sample scripts with annotated marking
- Department policy summaries
- Mark-scheme decoder
- Topic frequency maps
- “Mark-earning habits” posters for classrooms

2 Annual moderation cycle

- Schedule one formal moderation session post-Year 10 and Year 11 mocks.
- Review marking consistency and update policies as needed.
- Encourage open dialogue around application of mark schemes.

3 Ownership and accountability

- Assign a Marking Lead or UPS teacher as custodian of consistency.
- Link their role to curriculum and assessment objectives in departmental SEFs.

4 Link to performance and development

- Use moderation evidence to inform coaching conversations.
- Celebrate progress through visible mark recovery metrics and case studies.

Marking literacy is not a one-off training but a core leadership function that is:

- Continuous
- Measurable
- Embedded

From insights to impact

Marking literacy is one of the most cost-effective improvement levers available to schools. It delivers measurable gains across three areas:

1. **Better attainment:** fewer lost method, process, and communication marks.
2. **Data accuracy:** consistent marking and realistic predictions.
3. **Staff efficiency:** reduced moderation time and increased confidence.

Departments that systematically embed mark-awareness and calibration practices can achieve **visible gains in attainment, data reliability and teacher confidence.**

Small, well-structured CPD using the information in this toolkit and resources in the following appendices can translate into grade improvements and more accurate internal grade predictions.

Use the following appendices to help you implement marking CPD across your department effectively and consistently.

Appendices

Appendices

Appendix A: Illustrative marking code examples

Illustrative Example 1 - Probability without replacement

This question shadows June 2024 2H Q18. It concerns probability without replacement.

The original mark scheme detailed the award of each process mark for various correct steps using fractions. This has been omitted as it's not relevant to the points illustrated here.

There are only 3 red counters, 2 yellow counters and 4 blue counter in a bag.

James takes at random three counters from the bag.

Work out the probability that there are now more red counters than blue counters in the bag.

You must show all your working.

$P(BBY) = \frac{4}{9} \times \frac{3}{8} \times \frac{2}{7} = \frac{1}{21}$

$P(BYB) = \frac{4}{9} \times \frac{2}{8} \times \frac{3}{7} = \frac{1}{21}$

$P(YBB) = \frac{2}{9} \times \frac{4}{8} \times \frac{3}{7} = \frac{1}{21}$

$P(BBB) = \frac{4}{9} \times \frac{3}{8} \times \frac{2}{7} = \frac{1}{21}$

$\frac{1}{21} \times 4 = \frac{4}{21}$

$\frac{4}{21}$

Total 5 marks

This is a fully correct response and gets P4A1.

Answer	Mark	Mark scheme
	P4	(Awarded for various correct fractions, detail omitted for brevity)
$\frac{4}{21}$	A1	for $\frac{96}{504}$ oe eg $\frac{4}{21}$
		SC2 if P0 scored for answer of $\frac{96}{729}$ (replacement)

The OE coding on the mark scheme here indicates that A1 can be given for any correct equivalent fraction, as the question does not require the answer to be in its simplest form.

The special case mark in this question is given for candidates who have incorrectly interpreted the question as a replacement question and have worked all the way through with a denominator of 9.

Note that the mark is given for the response $\frac{96}{729}$ only; the incorrect method is not given any credit.

Or equivalent

There are only 3 red counters, 2 yellow counters and 4 blue counter in a bag.

James takes at random three counters from the bag.

Work out the probability that there are now more red counters than blue counters in the bag.

You must show all your working.

$P(BBY) = P(BYB) = P(YBB) = P(BBB)$

$= \frac{24}{504}$

$\frac{24}{504} + \frac{24}{504} + \frac{24}{504} + \frac{24}{504} = \frac{96}{504}$

$\frac{32}{168}$

Total 5 marks

This candidate has done some unfinished simplification, but as they have given an answer equivalent to the correct one, they are awarded P4A1.

Special case (Candidate A)

There are only 3 red counters, 2 yellow counters and 4 blue counter in a bag.

James takes at random three counters from the bag.

Work out the probability that there are now more red counters than blue counters in the bag.

You must show all your working.

$P(BBY) = \frac{4}{9} \times \frac{3}{9} \times \frac{2}{9} = \frac{24}{729}$ $\qquad \frac{24}{729} \times 4 = \frac{96}{729}$

$P(BYB) = \frac{4}{9} \times \frac{3}{9} \times \frac{2}{9} = \frac{24}{729}$

etc. ..

$\frac{96}{729}$

Total 5 marks

We can see that this candidate is working incorrectly with replacement, and has the answer $\frac{96}{729}$.

They score none of the process marks, but can be awarded SC2.

Special case (Candidate B)

There are only 3 red counters, 2 yellow counters and 4 blue counter in a bag.

James takes at random three counters from the bag.

Work out the probability that there are now more red counters than blue counters in the bag.

You must show all your working.

$P(BBY) = P(BYB) = P(YBB) = P(BBB)$

$= \frac{4}{9} \times \frac{3}{9} \times \frac{2}{9} = \frac{12}{729}$

$\frac{12}{729} \times 4 = \frac{48}{729}$

$\frac{48}{729}$

Total 5 marks

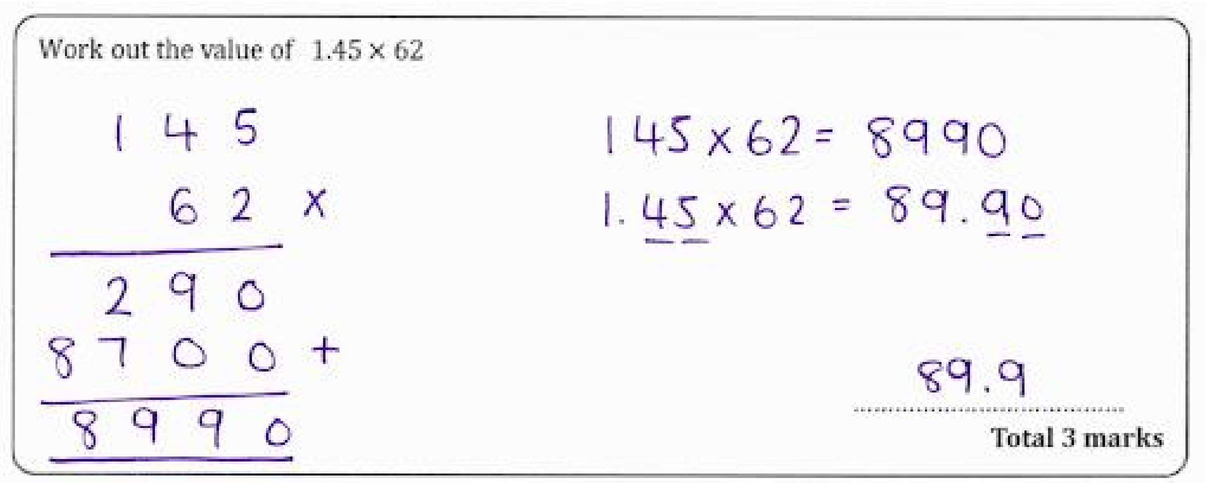
This candidate is also working with replacement, but they have made an error when multiplying the numerators (12 instead of 24).

There is no allowance for an SC1, so this candidate gets **no marks**.

Illustrative example 2 - Decimal multiplication

This question shadows June 2025 1F Q15. It concerns decimal multiplication without a calculator.

The original mark scheme exemplified the three most frequently seen methods for long multiplication in the Additional Guidance: standard algorithm, gelosia and box/grid method.


Work out the value of 1.45×62

```
  1 4 5
    6 2 ×
  -----
  2 9 0
8 7 0 0 +
-------
8 9 9 0
```

$145 \times 62 = 8990$

$1.\underline{45} \times 62 = 89.\underline{90}$

89.9

Total 3 marks

This is a fully correct model response and gets M2A1, and is an exemplar you may want to show your students, as all the steps are shown very clearly.

Answer	Mark	Mark scheme
89.9	M1	for a complete method with relative place value correct, including an intention to add all appropriate elements of the calculation or for a complete method to find 45% of 62 or 0.62 and add this on e.g. $62 \div 10$ (= 6.2) and "6.2" $\div 2$ (= 3.1) and $62 + 4 \times$ "6.2" $\times$ "3.1"
	A1	for digits 899
	A1	ft (dep on M1) for correct placement of the decimal point into their final answer

The second accuracy mark is a follow-through and dependent on the prior award of M1. This allows for a candidate to make an arithmetical slip when calculating their individual multiplications or adding up, provided the correct place value is preserved.

The alternative method allows for candidates who interpret this as a percentage question. The placement of the inverted commas allows for slips, e.g. miscalculating the value of 10%, but not for incorrect method, e.g. there must be a divide by 2 shown or implied by a correct answer to get from 10% to 5%, and from 10% to 40%.

Follow through

Work out the value of 1.45 × 62

×	100	40	5
60	6000	2400	360
2	200	80	10

6000
2400
360
200
80
10 +
9050

90.5

Total 3 marks

This candidate has made an arithmetical slip with 360. Place value is fine, and they have added, so M1 can be awarded.

They do not have the digits 899, so they can't get the first A1.

The decimal point is correctly placed in their answer, and they have M1 already, so the dependent accuracy mark is awarded for a total of 2 (M1A0A1).

Inverted commas and more nuance to follow-through

Work out the value of 1.45 × 62

0.45 × 62

62 ÷ 10 = 6.2 (10%)
6.2 ÷ 2 = 2.1 (5%)

6.2 × 2 = 12.4 (20%)
12.4 × 2 = 24.8 (40%)

24.8 + 2.1 = 26.9

62 + 26.9 = 88.9

88.9

Total 3 marks

*Note: There is an error in the value for 5%, but the method (dividing 10% by 2) is correct. "3.1" is in inverted commas, so is condoned. Although they have not explicitly told us that they're doing 4 times 6.2 to get 40%, they have an equivalent correct method (double and double).

This candidate is using the 45% method with an error in their value for 5%. Their method is complete and shown*, so they can get M1.

They lose the first A1, but the decimal point is correctly placed and M1 awarded, so the dependent accuracy mark is awarded for a total of 2 (M1A0A1).

Work out the value of 1.45 × 62

45% of 62

10% = 6.2
5% = 3.1

40% = 18.6

18.6 + 3.1 = 21.7
62 + 21.7 = 83.7

83.7

Total 3 marks

*Note: It looks like this candidate is doing the right thing, as they have 10% and 5% correct. However, their 40% is wrong with no supporting working (the × 4 is missing). This candidate cannot get M1.

This candidate is also using the 45% method with an error. Their method is not complete* so we cannot give M1.

They don't have the digits 899, so they can't get the first A1.

They cannot get the second A1 either, because this is **dependent** on the award of M1, which they do not have, so this scores 0.

The dependency criteria here mean that “making up” an answer to the calculation and then inserting the decimal point in the correct place for that answer yields **no credit**.

If there isn’t enough working out to support an answer that looks reasonable, it is usually also appropriate to award zero marks.

Inadequate working

Work out the value of 1.45 × 62

$145 \times 62 = 8590$

$1.45 \times 62 = 85.90$

85.9

Total 3 marks

Note: It’s likely that this candidate has done something mathematically appropriate to get their answer (only the hundreds digit is incorrect), and there seems to be some understanding of why the decimal point is positioned where it is. However, this is guesswork and examiners can only mark what they are presented with.

This candidate doesn’t have any relevant method* as described for M1.

They can’t get the first A1 as they don’t have the correct digits.

They also can’t get the second A1, because although their decimal point is in the correct place, this is dependent on prior award of M1.

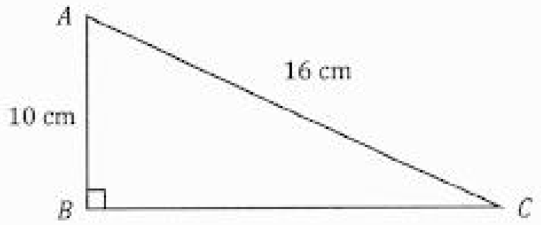
This response scores 0 marks (M0A0A0).

Illustrative Example 3 - Pythagoras' theorem

This question shadows June 2024 2F Q20 (2H Q1) and requires candidates to find a missing short side of a right-angled triangle using Pythagoras' theorem. It shows use of 'answer in the range' and ISW to allow leniency for rounding.

The examiner's report for Foundation noted that: "a great number of students were seemingly unable to successfully engage with this question". It is likely that the leeway reflected this and sufficiently credited those students who applied Pythagoras' theorem correctly.

ABC is a right-angled triangle.



Work out the length of BC.
Give your answer correct to 3 significant figures.

$BC^2 = 16^2 - 10^2$

$BC^2 = 156$

$BC = \sqrt{156} = 12.4899...$

12.5 cm

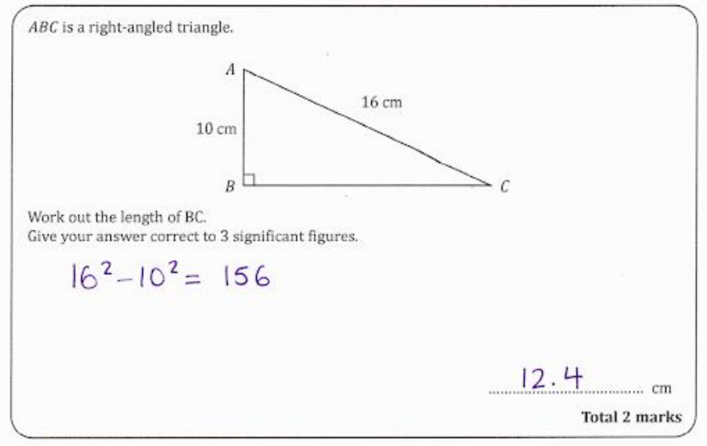
Total 2 marks

A fully correct response and gets M1A1.

Answer	Mark	Mark scheme
12.5	M1	for a correct first step to find *BC* eg $16^2 = 10^2 + BC$ or $16^2 - 10^2 (= 156)$ or $\sqrt{16^2 - 10^2}$ or $\sqrt{156}$ or $2\sqrt{39}$
	A1	for answer in the range 12.4 to 12.5 ISW incorrect rounding if answer given in range

The mark scheme uses the more common phrasing 'answer in the range' rather than 'AWRT'. Here, the range allows for candidates who incorrectly truncate to 3sf, rather than rounding, which is condoned in this instance.

ISW on incorrect rounding



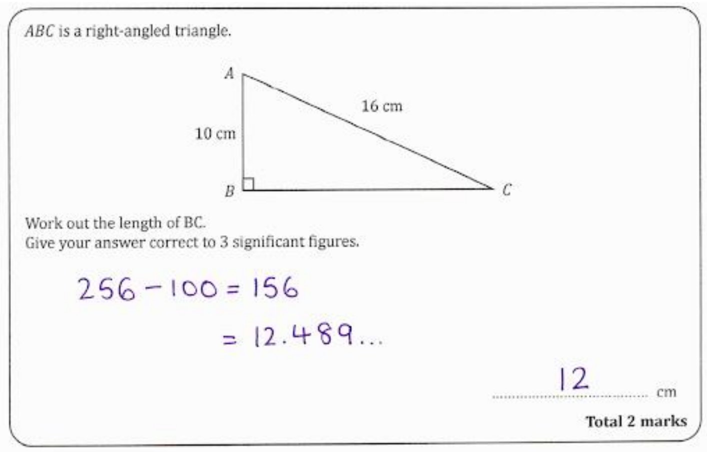
The first step is correct for M1.

Answer is within the range stated on the mark scheme, so may also be awarded A1.

It is likely that this candidate has truncated 12.489... instead of rounding.

This response scores 2 marks (M1A1).

ISW on incorrect rounding



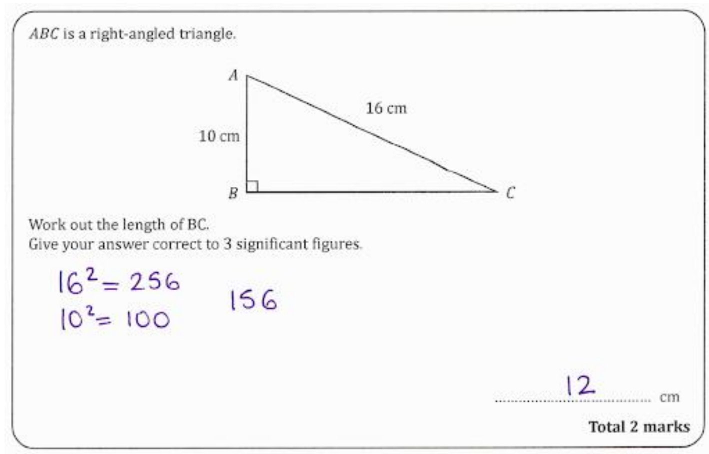
The first step is correct for M1.

They have an unrounded answer within the range, and are awarded A1.

ISW on the rounding of their final answer to the nearest whole.

This response scores 2 marks (M1A1).

Insufficient accuracy for A1



This candidate has written 156 which indicates 256-100. Even though it's not explicitly stated, this is enough for M1.

They may rounded the length to the nearest whole.

But, they have not given an answer in the correct range, so cannot get A1.

This response scores 1 mark (M1A0).

Appendix B: Command words

Write down ✏️	The answer should be easily obtainable from the information given in the question, with no need to do any calculation.
Work out 👣	Perform one or more of a set of steps to arrive at an answer.
Calculate 🔢	This means exactly the same as 'work out', and does not mean a calculator is necessarily required.
Evaluate ✍️	Work out and give the answer as a numerical value, such as when calculating using indices.
Estimate 📈	Give a sensible rough guess - think about decimal places and significant figures. Don't work out an exact answer!
Show 🔍	Demonstrate to the examiner that what you have said is true mathematically.
Prove 🗣️	Show that something MUST be true, using mathematics in the argument.

THIRD SPACE LEARNING

Read more: [Exam techniques to help your students make the most of their marks]()

7 min read

Appendix C: Skills for exams and beyond

Transferable skills	Technique	What to do
Logical thinking, clarity.	**Show full working**	Write every step clearly. Line up calculations.
Modelling, planning, problem framing.	**Set up an equation or representation**	Translate the question into a model, table or equation before calculating.
Critical reading, information selection.	**Highlight key information**	Annotate or underline important data. Tick off values once used.
Self-review, precision, quality assurance.	**Check required form (rounding etc)**	Check for required units, decimal places, or significant figures.
Visual reasoning, confidence with representation.	**Annotate diagrams, graphs and charts**	Label key points, lines, and angles directly on diagrams.
Real-world numeracy, contextual accuracy.	**Check units and conversions**	Keep units consistent and present money, time, or measures correctly.

Technique	What to do
Strategic pacing	Roughly one mark per minute; move on and return later if stuck.
Decode the command word	Match your answer type to the instruction (“work out”, “show that”, etc.).
Sense-check answers	Make sure values are realistic and use correct units.
Scan for blanks	Always attempt a first step on multi-mark questions.
Use a calculator (P2 & P3)	Record key inputs, use memory functions, avoid early rounding.
Substitute, then simplify	Plug in numbers before rearranging to reduce algebra errors.

Appendix D: Classroom prompts

Show Full Working

Why it matters: Over half the marks on your exam papers come from methods or processes.

Steps to success:

- Write every calculation step clearly.
- Record calculator inputs.
- Annotate working to signpost key steps.
- Use correct symbols.
- Circle or box the final answer once it's complete.

Remember: Examiners can only mark what they can see.

Real-life skill: Communicating reasoning clearly

Check Your Answer

Why it matters: Marks are often lost for incorrect rounding, units, or answers that don't make sense.

Steps to success:

- Read what the question asks for (decimal places, significant figures, units).
- Check units and keep them consistent.
- Ask whether the final answer looks reasonable (realistic size/cost, positive answers for lengths, areas and volumes).
- Make sure the final line of your work matches what's required.

Remember: A correct calculation can still lose marks if it's in the wrong format.

Real-life skill: Quality-checking and proof-reading

Appendix E: Exemplar response pack

Use these mock candidate responses with space for notes and discussion points in departmental meetings to support moderation and shared marking standards.

For reference, the marking commentary is included. There is no commentary for Square Numbers, the mark scheme has lists acceptable and unacceptable responses.

1 Laws of Indices (shadows June 2023 1F Q29)

- Method and accuracy examples, including a variety of methods
- Partial-credit and zero-mark examples
- Misread case example

2 Square Numbers (shadows November 2024 2F Q8a)

- Communication marking - examples of insufficient responses

3 Probability Without Replacement (shadows June 2024 2H Q18)

- Special case marking and common errors leading to no credit

4 Decimal Multiplication (shadows June 2025 1F Q15)

- Applications of follow-through marking
- Dependent accuracy marks
- Use of inverted commas
- Examples of inadequate working

5 Pythagoras' Theorem (shadows June 2024 2F Q20 / 2H Q1)

- Answers in an acceptable range
- ISW rounding of final answers
- Truncation and rounding errors

THIRD SPACE LEARNING

Method and process marks

Exemplar responses

Work out the value of $\frac{3^{-2} \times 3^{5}}{3}$

....

Total 2 marks

Answer	Mark	Mark scheme
9	M1	for simplifying using a correct rule of indices as a first step e.g. $3^{5-2}(= 3^3 \text{ oe})$ or $3^{-2-1}(= 3^{-3} \text{ oe})$ or $3^{5-1}(= 3^4 \text{ oe})$ or $\frac{3\times3\times3\times3\times3}{3\times3\ \times3}$ or 3^2
	A1	cao

Response	Notes
Work out the value of $\frac{3^{-2} \times 3^{5}}{3}$ $-2+5=3$ $\quad \frac{3^3}{3} = \frac{3\times3\times3}{3} = 9$ 9 **Total 2 marks**	
Work out the value of $\frac{3^{-2} \times 3^{5}}{3}$ $3^{-2} \div 3 = 3^{-3}$ $3^5 \times 3^{-3} = 3^2 = 9$ .... **Total 2 marks**	

Response	Notes
Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$ $3^{-2}\times 3^{4}=3^{2}=9$ 9 **Total 2 marks**	
Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$ $3^{-2}\times 3^{5}=3^{3}$ $\frac{3^{3}}{3}=\frac{9}{3}=3$ 3 **Total 2 marks**	
Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$ 9 **Total 2 marks**	
Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$ $\frac{9}{3}=3$ 3 **Total 2 marks**	
Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$ $\frac{9^{3}}{3}=3^{2}=9$ 9 **Total 2 marks**	
Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$ $3^{2}=9$ 9 **Total 2 marks**	
Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$ $\frac{3^{-2}\times 3^{6}}{3}=\frac{3^{4}}{3}=\frac{3\times 3\times 3\times 3}{3}=27$ 27 **Total 2 marks**	

Marking commentary

Response	Commentary
Work out the value of $\frac{3^{-2}\times 3^5}{3}$ $-2+5=3$ $\frac{3^3}{3}=\frac{3\times3\times3}{3}=9$ 9 Total 2 marks	M1 Sight of 3^3 indicates the candidate simplified the numerator using the multiplication law for indices. A1 Correct answer.
Work out the value of $\frac{3^{-2}\times 3^5}{3}$ $3^{-2}\div 3=3^{-3}$ $3^5\times 3^{-3}=3^2=9$ Total 2 marks	M1 Division law used correctly as a first step and 3^2 clearly shown. A1 The answer has not been transferred to the line, but it's clear that the response stops here and 9 is their final answer.
Work out the value of $\frac{3^{-2}\times 3^5}{3}$ $3^{-2}\times 3^4=3^2=9$ 9 Total 2 marks	M1 They've used division as a first step correctly and 3^2 is clear, so can award M1. A1 Correct answer.
Work out the value of $\frac{3^{-2}\times 3^5}{3}$ $3^{-2}\times 3^5=3^3$ $\frac{3^3}{3}=\frac{9}{3}=3$ 3 Total 2 marks	M1 A0 Incorrectly evaluated 3^3, but they have shown a correct evaluation of indices to gain the method mark.
Work out the value of $\frac{3^{-2}\times 3^5}{3}$ 9 Total 2 marks	M1 A1 This response gets full marks. Correct answer implies correct working (if nothing to contradict), the question does not ask for working.

Response	Commentary
Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$ $\frac{9}{3}=3$ 3 Total 2 marks	M0 A0 It is likely that this candidate has made a similar error, and their 9 could come from evaluating 3^2. However, they haven't shown this as required, so there is not enough to award M1.
Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$ $\frac{9^3}{3}=3^2=9$ 9 Total 2 marks	M0 A0 The answer looks "correct" at first glance. However, this candidate has incorrectly multiplied the bases. 3^{-2} - 3^5 = 9^3 is clearly wrong. No method mark awarded, and accuracy cannot be awarded either.
Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$ $3^2=9$ 9 Total 2 marks	M1 A1 This response is stated on the mark scheme. While it's not explicit how the candidate has arrived at 3^2, we cannot make assumptions about the validity of their reasoning. Full credit is awarded.
Work out the value of $\frac{3^{-2}\times 3^{5}}{3}$ $\frac{3^{-2}\times 3^{6}}{3}=\frac{3^4}{3}=\frac{3\times3\times3\times3}{3}=27$ 27 Total 2 marks	This response would likely be marked as a misread, M1A0. The candidate has misread the 5 for a 6, but has carried out the calculation correctly using their misread figure without changing the difficulty of the question.

Square numbers (shadows November 2024 2F Q8a)

Exemplar responses

Layla says that 12 is a square number because $6^2 = 12$

(a) Is Layla correct? Give a reason for your answer.

....

....

....

Total 1 mark

Answer	Mark	Mark scheme
No and reason	C1	No **and** reason **Acceptable examples** No, because $6^2 = 36$ **or** $6^2 = 6 \times 6$ $3^2 = 9$ and $4^2 = 16$ so 12 is not a square number Layla is wrong because $\sqrt{12} \neq 6$ **or** $\sqrt{12} = 3.46$ ... Incorrect because 12 is 6×2 not 6×6 No, she multiplied by 2 instead of squaring **or** 6^2 is not 6×2 Wrong as she added instead of multiplying **Not acceptable examples** Yes ... No, because 12 is 6×2 Incorrect because 12 is not a square number No because 6^2 is not 12 No because she added No because a square number is when a number is multiplied by itself

Response	Notes
Layla says that 12 is a square number because $6^2 = 12$ (a) Is Layla correct? Give a reason for your answer. Yes, because $6^2 = 36$ and $6 \times 6 = 36$. **Total 1 mark**	
Layla says that 12 is a square number because $6^2 = 12$ (a) Is Layla correct? Give a reason for your answer. No, because $6 \times 2 = 12$ **Total 1 mark**	
Layla says that 12 is a square number because $6^2 = 12$ (a) Is Layla correct? Give a reason for your answer. NO, 12 is not a square number and 6^2 is not 12. **Total 1 mark**	

Probability without replacement (shadows June 2024 2H Q18)

Exemplar responses

There are only 3 red counters, 2 yellow counters and 4 blue counter in a bag.

James takes at random three counters from the bag.

Work out the probability that there are now more red counters than blue counters in the bag.

You must show all your working.

....

Total 5 marks

Answer	Mark	Mark scheme
$\frac{4}{21}$	P4	(Awarded for various correct fractions, detail omitted for brevity)
	A1	for $\frac{96}{504}$ oe eg $\frac{4}{21}$
		SC2 if P0 scored for answer of $\frac{96}{729}$ (replacement)

Response	Notes
There are only 3 red counters, 2 yellow counters and 4 blue counter in a bag. James takes at random three counters from the bag. Work out the probability that there are now more red counters than blue counters in the bag. You must show all your working. $P(BBY) = P(BYB) = P(YBB) = P(BBB)$ $= \frac{24}{504}$ $\frac{24}{504} + \frac{24}{504} + \frac{24}{504} + \frac{24}{504} = \frac{96}{504}$ $\frac{32}{168}$ Total 5 marks	
There are only 3 red counters, 2 yellow counters and 4 blue counter in a bag. James takes at random three counters from the bag. Work out the probability that there are now more red counters than blue counters in the bag. You must show all your working. $P(BBY) = \frac{4}{9} \times \frac{3}{9} \times \frac{2}{9} = \frac{24}{729}$ $\quad \frac{24}{729} \times 4 = \frac{96}{729}$ $P(BYB) = \frac{4}{9} \times \frac{3}{9} \times \frac{2}{9} = \frac{24}{729}$ etc. .. $\frac{96}{729}$ Total 5 marks	
There are only 3 red counters, 2 yellow counters and 4 blue counter in a bag. James takes at random three counters from the bag. Work out the probability that there are now more red counters than blue counters in the bag. You must show all your working. $P(BBY) = P(BYB) = P(YBB) = P(BBB)$ $= \frac{4}{9} \times \frac{3}{9} \times \frac{2}{9} = \frac{12}{729}$ $\frac{12}{729} \times 4 = \frac{48}{729}$ $\frac{48}{729}$ Total 5 marks	

Marking commentary

Response	Commentary
There are only 3 red counters, 2 yellow counters and 4 blue counter in a bag. James takes at random three counters from the bag. Work out the probability that there are now more red counters than blue counters in the bag. You must show all your working. P(BBY) = P(BYB) = P(YBB) = P(BBB) $= \frac{24}{504}$ $\frac{24}{504} + \frac{24}{504} + \frac{24}{504} + \frac{24}{504} = \frac{96}{504}$ $\frac{32}{168}$ **Total 5 marks**	This candidate has unfinished simplification, but as they have given an answer equivalent to the correct one, they are awarded P4A1.
There are only 3 red counters, 2 yellow counters and 4 blue counter in a bag. James takes at random three counters from the bag. Work out the probability that there are now more red counters than blue counters in the bag. You must show all your working. P(BBY) $= \frac{4}{9} \times \frac{3}{9} \times \frac{2}{9} = \frac{24}{729}$ $\quad \frac{24}{729} \times 4 = \frac{96}{729}$ P(BYB) $= \frac{4}{9} \times \frac{3}{9} \times \frac{2}{9} = \frac{24}{729}$ etc. . . $\frac{96}{729}$ **Total 5 marks**	This candidate is working incorrectly with replacement, and has the answer $\frac{96}{729}$. They score none of the process marks, but can be awarded SC2.
There are only 3 red counters, 2 yellow counters and 4 blue counter in a bag. James takes at random three counters from the bag. Work out the probability that there are now more red counters than blue counters in the bag. You must show all your working. P(BBY) = P(BYB) = P(YBB) = P(BBB) $= \frac{4}{9} \times \frac{3}{9} \times \frac{2}{9} = \frac{12}{729}$ $\frac{12}{729} \times 4 = \frac{48}{729}$ $\frac{48}{729}$ **Total 5 marks**	This candidate is also working with replacement, but made an error when multiplying the numerators (12 instead of 24). There is no allowance for an SC1, so this candidate gets **no marks**.

Decimal multiplication (shadows June 2025 1F Q15)

Exemplar responses

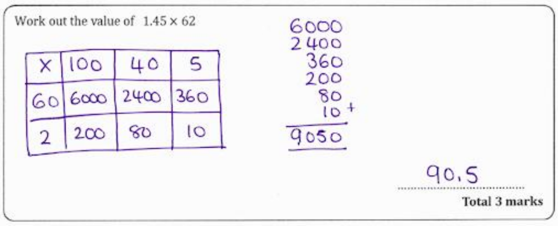
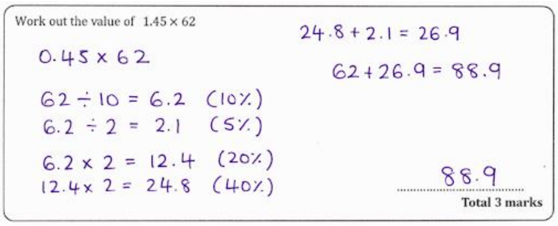
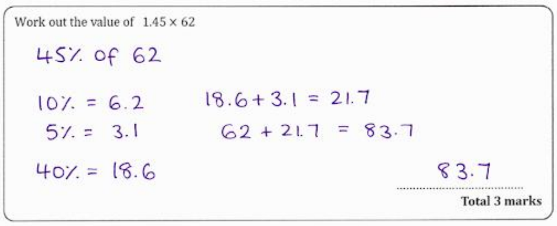
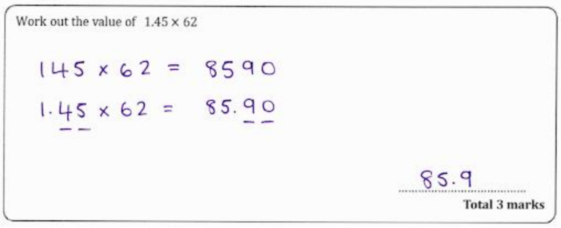
Work out the value of 1.45×62

....

Total 3 marks

Answer	Mark	Mark scheme
89.9	M1	for a complete method with relative place value correct, including an intention to add all appropriate elements of the calculation or for a complete method to find 45% of 62 or 0.62 and add this on e.g. 62 ÷ 10 (= 6.2) and "6.2" ÷ 2 (= 3.1) and 62 + 4 × "6.2" × "3.1"
	A1	for digits 899
	A1	ft (dep on M1) for correct placement of the decimal point into their final answer

The original mark scheme exemplified the three most frequently seen methods for long multiplication (standard algorithm, gelosia and box/grid method) in the Additional Guidance.

Response	Notes
	
	
	
	

Marking commentary

<table>
<tr><th>Response</th><th>Commentary</th></tr>
<tr><td>Work out the value of 1.45 × 62

× | 100 | 40 | 5
60 | 6000 | 2400 | 360
2 | 200 | 80 | 10

6000
2400
360
200
80
10 +
9050

90.5
Total 3 marks</td><td>This candidate made an arithmetical slip with 360. Place value is fine and they added, so M1 can be awarded.

They do not have the digits 899, so can’t get the first A1.

The decimal point is correctly placed in their answer, and they have M1 already, so the dependent accuracy mark is awarded for a total of 2 (M1A0A1).</td></tr>
<tr><td>Work out the value of 1.45 × 62

0.45 × 62
62 ÷ 10 = 6.2 (10%)
6.2 ÷ 2 = 2.1 (5%)
6.2 × 2 = 12.4 (20%)
12.4 × 2 = 24.8 (40%)
24.8 + 2.1 = 26.9
62 + 26.9 = 88.9

88.9
Total 3 marks

There is an error in the value for 5%, but the method (dividing 10% by 2) is correct. “3.1” is in inverted commas so we can condone this. Although they have not explicitly shown they’re doing 4 x 6.2 to get 40%, they have an equivalent correct method (double and double).</td><td>This candidate is using the 45% method with an error in their value for 5%. Their method is complete and shown, so can get M1.

They lose the first A1, but the decimal point is correctly placed and M1 awarded, so the dependent accuracy mark is awarded for a total of 2 (M1A0A1).</td></tr>
<tr><td>Work out the value of 1.45 × 62

45% of 62
10% = 6.2
5% = 3.1
40% = 18.6
18.6 + 3.1 = 21.7
62 + 21.7 = 83.7

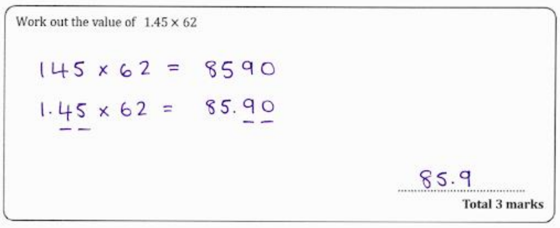
83.7
Total 3 marks

It’s likely that this candidate has done something mathematically appropriate to get their answer (only the hundreds digit is incorrect). There seems to be some understanding of why the decimal point is positioned where it is. However, examiners can only mark what they are presented with.</td><td>This candidate doesn’t have a relevant method for M1.

They can’t get the first A1 as they don’t have the correct digits.

They also can’t get the second A1, because although their decimal point is in the correct place, this is dependent on prior award of M1.

This response scores 0 marks (M0A0A0).</td></tr>
</table>

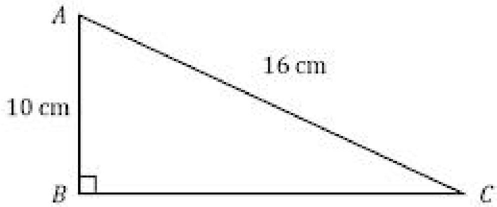
Response	Notes
	This candidate doesn't have a relevant method* for M1. They can't get the first A1 as they don't have the correct digits. They also can't get the second A1, because although their decimal point is in the correct place, this is dependent on prior award of M1. This response scores 0 marks (M0A0A0).

*It's likely that this candidate has done something mathematically appropriate to get their answer (only the hundreds digit is incorrect). There seems to be some understanding of why the decimal point is positioned where it is. However, examiners can only mark what they are presented with.

Pythagoras' theorem (shadows June 2024 2F Q20 / 2H Q1)

Exemplar responses

ABC is a right-angled triangle.

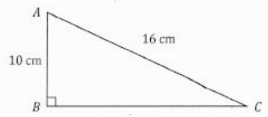
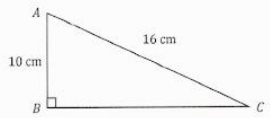
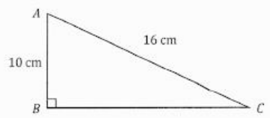


Work out the length of BC.
Give your answer correct to 3 significant figures.

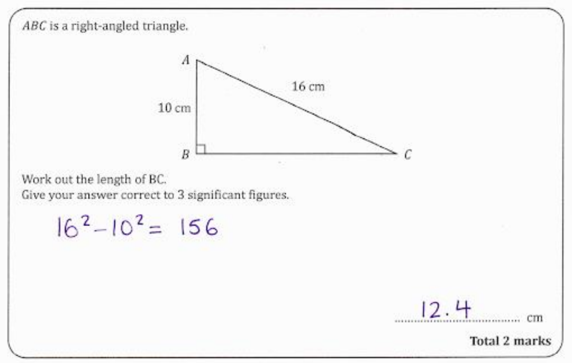
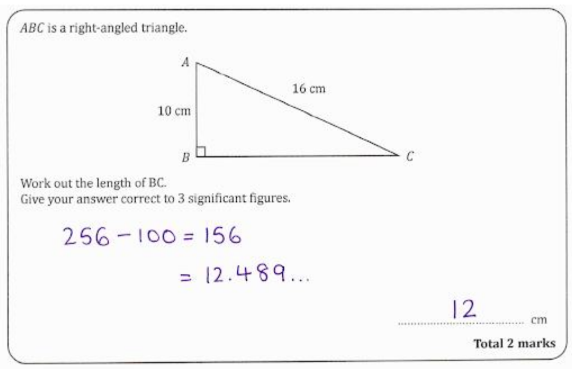
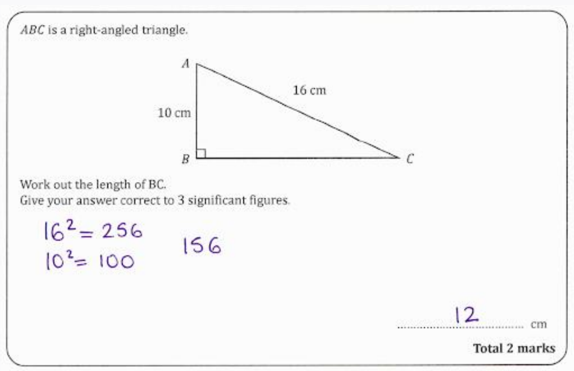
.... cm

Total 2 marks

Answer	Mark	Mark scheme
12.5	M1	for a correct first step to find BC eg $16^2 = 10^2 + BC$ or $16^2 - 10^2 (= 156)$ or $\sqrt{16^2 - 10^2}$ or $\sqrt{156}$ or $2\sqrt{39}$
	A1	for answer in the range 12.4 to 12.5 ISW incorrect rounding if answer given in range

Response	Notes
ABC is a right-angled triangle.  Work out the length of BC. Give your answer correct to 3 significant figures. $16^2 - 10^2 = 156$ 12.4 cm **Total 2 marks**	
ABC is a right-angled triangle.  Work out the length of BC. Give your answer correct to 3 significant figures. $256 - 100 = 156$ $= 12.489...$ 12 cm **Total 2 marks**	
ABC is a right-angled triangle.  Work out the length of BC. Give your answer correct to 3 significant figures. $16^2 = 256$ $10^2 = 100$ 156 12 cm **Total 2 marks**	

Marking commentary

Response	Commentary
 ABC is a right-angled triangle. A, 16 cm, 10 cm, B, C Work out the length of BC. Give your answer correct to 3 significant figures. $16^2-10^2= 156$ 12.4 cm **Total 2 marks**	This candidate has a correct first step so gets M1. They have an answer in the range stated on the mark scheme, so may also be awarded A1. It is likely that this candidate has truncated 12.489... instead of rounding. This response scores 2 marks (M1A1).
 ABC is a right-angled triangle. A, 16 cm, 10 cm, B, C Work out the length of BC. Give your answer correct to 3 significant figures. $256-100=156$ $= 12.489...$ 12 cm **Total 2 marks**	There is a correct first step so you can award M1. They have written down an unrounded answer in the appropriate range, so can be awarded A1. ISW on the rounding of their final answer to the nearest whole. This response scores 2 marks (M1A1).
 ABC is a right-angled triangle. A, 16 cm, 10 cm, B, C Work out the length of BC. Give your answer correct to 3 significant figures. $16^2= 256$ $10^2= 100$ 156 12 cm **Total 2 marks**	This candidate has enough to give M1; they have 156 which indicates 256 - 100, even though it's not explicitly stated. This candidate may have rounded the length to the nearest whole. However, they have not given us an answer in the correct range, so they cannot get A1. This response scores 1 mark (M1A0).