

What every mark is for

Three objectives — and the split between them changes with your tier, which almost nobody is told.

A01

50% FOUND. 40% HIGHER

Use and apply standard techniques

- accurately recall facts, terminology and definitions
- use and interpret notation correctly
- accurately carry out routine procedures or set tasks requiring multi-step solutions

The marks you get for doing maths you have been taught, on a question that looks like the ones you practised.

WHAT IT LOOKS LIKE IN A QUESTION

Work out 15% of £240.

The method is named or obvious. Do it accurately and the marks are yours.

A02

25% FOUND. 30% HIGHER

Reason, interpret and communicate mathematically

- make deductions, inferences and draw conclusions from mathematical information
- construct chains of reasoning to achieve a given result
- interpret and communicate information accurately
- present arguments and proofs
- assess the validity of an argument and critically evaluate a given way of presenting information

“Show that”, “prove”, “explain why”. The answer is the argument, not the number at the end of it.

WHAT IT LOOKS LIKE IN A QUESTION

Show that the sum of any two odd numbers is even.

Nothing to calculate. The answer is the chain of reasoning, written out.

A03

25% FOUND. 30% HIGHER

Solve problems within mathematics and in other contexts

- translate problems in mathematical and non-mathematical contexts into mathematical processes
- interpret results in the context of the given problem
- evaluate methods used and results obtained
- evaluate solutions to identify how they may have been affected by assumptions made

The question does not tell you which method to use. Deciding that is the thing being marked.

WHAT IT LOOKS LIKE IN A QUESTION

A 500 g box costs £2.40. A 750 g box costs £3.45. Which is better value, and by how much?

No method given. Choosing one, and justifying the comparison, is what is being marked.

Half of Foundation is A01. On Higher it is two fifths — the other three fifths are reasoning and problem solving, which is why practising procedures alone stops working at grade 5.

Objectives, sub-bullets and both sets of weightings are quoted from **Mathematics GCSE subject content and assessment objectives, Department for Education, June 2013 (DFE-00233-2013)**, Crown copyright, Open Government Licence. The same statements were checked against the current GCSE and are identical in **every GCSE Mathematics specification**. The bold line under each is ours.

The three kinds of formula

The subject content sorts every formula into one of three groups. Which group it is in changes how you revise it.

Know these — must not be given in the assessment

“Candidates are expected to know these formulae; they must not be given in the assessment.”

The quadratic formula the solutions of $ax^2 + bx + c = 0$, where $a \neq 0$ $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	Circumference of a circle r is the radius, d the diameter $= 2\pi r = \pi d$
Area of a circle $= \pi r^2$	Pythagoras's theorem c is the hypotenuse $a^2 + b^2 = c^2$
Trigonometry right-angled triangle, c the hypotenuse $\sin A = a/c \quad \cos A = b/c \quad \tan A = a/b$	The sine rule in any triangle ABC $a/\sin A = b/\sin B = c/\sin C$
The cosine rule in any triangle ABC $a^2 = b^2 + c^2 - 2bc \cos A$	Area of a triangle two sides and the angle between them $= \frac{1}{2}ab \sin C$

Derive or understand these — also must not be given

“The following formulae are not specified in the content but should be derived or informally understood by candidates. These formulae must not be given in the examination.”

Area of a trapezium a and b are the parallel sides, h their perpendicular separation $= \frac{1}{2}(a + b)h$	Volume of a prism $= \text{area of cross section} \times \text{length}$
Compound interest P principal, r rate, n number of periods $\text{total accrued} = P(1 + r/100)^n$	Probability either, or both $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$
Conditional probability $P(A \text{ and } B) = P(A \text{ given } B)P(B)$	

You can be given these — in the question, or in a list

“Formulae that candidates should be able to use, but need not memorise. These can be given in the exam, either in the relevant question, or in a list from which candidates select and apply as appropriate.”

Curved surface area of a cone l is the slant height $= \pi rl$	Surface area of a sphere $= 4\pi r^2$
Volume of a sphere $= \frac{4}{3} \pi r^3$	Volume of a cone h is the perpendicular height $= \frac{1}{3} \pi r^2 h$
Kinematics a constant acceleration, u initial and v final velocity, s displacement $v = u + at \quad s = ut + \frac{1}{2}at^2 \quad v^2 = u^2 + 2as$	

WHAT HAPPENS IN THE EXAM RIGHT NOW

A formulae sheet is provided in the paper, covering the two groups above that normally have to be memorised. It began with the 2025 exams and now runs for the remaining lifetime of the current specifications — so it applies to every year group in the school.

So the skill being tested is not recall. It is knowing which of these to reach for, and recognising the question that wants it.

Show your working

A wrong answer with working scores. A wrong answer without it does not.

M

Method marks

Given for a correct method, even when the arithmetic after it goes wrong.

This is why a wrong answer with working beats a wrong answer without. It is also why one line of working on a “work out” question is never wasted.

A

Accuracy marks

Given for the right answer, and usually only if the method mark was earned first.

Round at the end, not in the middle. A rounded number carried through three steps loses accuracy marks that the method already earned.

B

Independent marks

Given for a correct answer or statement on its own, with no method required.

Short answers, units, a correctly drawn line. Fast marks — take them before you get stuck on the long question.

Write the method down before the calculator

If the working is only in the machine, there is nothing for an examiner to give a method mark to.

Never rub anything out

Cross it through with one line. Crossed-out work is still marked if nothing replaces it; erased work cannot be.

Answer in the units asked for

Converting at the end is a mark. Leaving centimetres where the question said metres throws away everything above it.

On “show that”, end where the question said

The last line of your working has to be the thing you were asked to show, written out.

Carry the exact value, round the answer

Keep π and surds in as long as you can. Rounding early is the most common accuracy loss on the paper.

If you are stuck, write what you know

Label the diagram, state the formula, put in the numbers you have. Method marks live in that step.