

Nearly every mark lost in an IGCSE Maths paper is lost to one of the slips below, not to a topic the student had never met. Read this before a mock, and again the night before the exam. 失分几乎都来自下面这些小错误, 而不是没学过的内容。

Arithmetic and number

Rounding too early. Keep full accuracy in the calculator and round only the final answer – a mid-calculation round is the commonest cause of a near-miss answer.

Rounding to the wrong thing: 3 significant figures is not 3 decimal places. Read which the question asks for.

Giving a money answer to three decimal places. Money is always two: \$12.30, not \$12.3 or \$12.297.

Forgetting the units, or mixing them – adding centimetres to metres, or leaving an area in cm^2 when the question used m.

Treating a percentage increase and its reverse as the same. A 20% rise then a 20% fall does not return to the start.

For reverse percentages, dividing by the percentage instead of by the multiplier: if \$84 is after a 20% discount, divide by 0.8, not by 20.

Using the wrong multiplier for compound interest – the multiplier is 1.05 for 5% growth, and it is raised to the power of the number of years.

Writing standard form with a number outside 1 to 10, such as 32×10^3 .

Algebra

Expanding $-(x - 3)$ as $-x - 3$. The minus sign multiplies both terms.

Squaring a bracket by squaring each term: $(x + 3)^2$ is not $x^2 + 9$.

Cancelling across a plus sign in a fraction. In $\frac{x+2}{2}$ the 2s do not cancel.

Solving an equation by doing something to one side only.

Losing a solution when taking a square root – $x^2 = 16$ has two answers.

Forgetting to reverse the inequality sign when multiplying or dividing by a negative number.

Factorising incompletely: taking out 2 from $4x^2 + 8x$ instead of $4x$.

Substituting into a formula without brackets, so -3^2 is calculated as -9 instead of 9 .

Geometry and mensuration

Using the diameter where the formula wants the radius, in both area and circumference.

Using the slant height instead of the perpendicular height in the area of a triangle, or the perpendicular height where a cone needs the slant.

Assuming a diagram is to scale. Diagrams are not accurate unless the question says so – work from the given values.

Assuming a triangle is right-angled or isosceles because it looks it. Use only what is marked or stated.

Not giving a reason in a circle-theorem or angle question. ‘Angles in the same segment are equal’ is the mark; the number alone is not.

Using Pythagoras on a non-right-angled triangle, or the sine rule where the cosine rule is needed. Two sides and the included angle means cosine rule.

Forgetting the second solution for an obtuse angle when using the sine rule.

Mixing up area and volume scale factors: if lengths scale by k , areas scale by k^2 and volumes by k^3 .

Graphs, statistics and probability

Reading a scale wrongly because each small square is not one unit. Check the scale before plotting or reading.

Joining points with straight lines where the graph is a curve, or drawing a curve that misses the plotted points.

Calculating the gradient as $\Delta x/\Delta y$ instead of $\Delta y/\Delta x$, or ignoring that a downward slope is negative.

Finding the mean of a grouped frequency table by averaging the frequencies instead of using the midpoints.

Confusing the modal class with the mode, or the median with the middle value of the frequency column instead of the data.

In a cumulative frequency graph, plotting at the midpoint instead of the upper class boundary.

Adding probabilities that should be multiplied. AND means multiply along a branch; OR means add across branches.

Forgetting that probabilities change on the second pick when there is no replacement.

Exam habits

Not showing working. With working, a wrong final answer still scores method marks; without it, it scores nothing.

Losing the whole of a later part because an early answer was wrong – carry your own value forward, you still get the marks for the correct method.

Leaving a blank. There is no penalty for a wrong attempt and an unattempted question is a guaranteed zero.

Answering with a decimal where the question said ‘give an exact answer’ – that means a surd, a fraction or a multiple of π .

Not re-reading the question after finishing, so the answer given is the wrong quantity: the area when the perimeter was asked, or x when the question wanted the angle.