

The IA checklist I use as an IB examiner

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I give a version of this sheet to my own students before their draft goes to their teacher. Tick each box only when you can point to the place in your IA that shows it. Where you cannot, you have found your next marks.

A · Presentation

4 marks

- ☐ A title and a clear, precise aim in the introduction (one of the most important sentences you will write).
- ☐ An introduction, a body and a conclusion — and each part links to the next.
- ☐ Written for a classmate (a peer), not for your teacher: someone who knows the course but not your topic can follow it.
- ☐ Graphs, tables and calculations appear in the order you discuss them, next to the text that uses them.
- ☐ Large data sets go in an appendix, with a summary or sample in the body.
- ☐ No repeated calculations: show one worked example, then use a table.
- ☐ Citations for every source, as footnotes on the page where you use them, plus a bibliography.
- ☐ Tables that run over a page break repeat their column headings.
- ☐ Page numbers; figures numbered and referred to in the text.
- ☐ The conclusion answers the aim you stated at the start.

B · Mathematical communication

4 marks

- ☐ Every variable defined when it first appears, with units and domain (e.g., “let t be the time in minutes, $t \geq 0$ ”).
- ☐ Key terms defined where they are first used — not in a glossary at the start.
- ☐ No calculator or computer notation: write x^2 , not $x^{\wedge}2$; $e^{(0.5t)}$ as a proper exponent; $\sqrt{}$ not sqrt ; $\times$ not $*$; E for standard form never.
- ☐ $\approx$ for every rounded value, and a sentence explaining your rounding (e.g., to 3 significant figures because the data were measured to 3 s.f.).
- ☐ Graphs with titles, labelled axes, units and scales; an axis break shown if an axis does not start at zero.
- ☐ Tables with headings and units in the column titles.
- ☐ Variables in italics, consistently (an equation editor does this for you).
- ☐ Equations typed in an equation editor, in the same font throughout.
- ☐ The word “substitute”, not “plug in”; mathematical vocabulary used accurately (gradient, asymptote, residual...).
- ☐ Only statistics you use: do not calculate a standard deviation you never interpret.

C • Personal engagement

3 marks

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- ☐ Your own question — not a topic lifted from a list without changes.
- ☐ Predictions made before calculating, then tested (“I expected the exponential to fit better because...”).
- ☐ Questions you ask and answer along the way (“Would this still work for a deeper chain?”).
- ☐ Your own data or measurements where possible, and your own decisions about how to collect them.
- ☐ Decisions explained: why this model, why this method, why not the obvious alternative.
- ☐ Mathematics that is unfamiliar to you, clearly explained in your own words (and said to be new to you).
- ☐ Different perspectives: comparing methods, historical or global context used mathematically.
- ☐ Your own presentation of the results — your graphs, your tables, your explanations.

D • Reflection

3 marks

- ☐ After each major result: what does it mean in context, and is it reasonable?
- ☐ “What next?” — reflection that leads to the next step (“the residuals show a pattern, so I tried...”).
- ☐ Comparisons between methods or models, with reasons for choosing one.
- ☐ Strengths and weaknesses of your model, linked to specific evidence (residuals, predictions).
- ☐ Limitations that matter to your aim — and how much they change your conclusion.
- ☐ Implications: what your answer means for the real decision or question.
- ☐ What you learned, mathematically, and how the exploration could be extended.
- ☐ A conclusion that refers back to the reflections you made along the way.

E • Use of mathematics

6 marks

- ☐ Every technique is relevant to your aim — it helps answer the question.
- ☐ Mathematics at the level of your course (or similar), not only prior-knowledge mathematics.
- ☐ Reasoning shown: why each method is appropriate and what each step does.
- ☐ Technology used with understanding: say what the software computed and interpret it.
- ☐ One full worked example of each repeated calculation, then a table.
- ☐ Conditions checked before a test (sample size, expected frequencies, independence).
- ☐ Correlation computed and interpreted before any line of best fit is drawn.
- ☐ Models tested — against data you did not use, or by checking residuals.
- ☐ Correct results (minor slips are tolerated; errors that change conclusions are not).
- ☐ HL: rigour — justified steps, precise statements, proofs or derivations where appropriate.

HL students: only Criterion E is different. The top bands expect mathematics at HL level that is sophisticated and rigorous: justified steps, precise statements, conditions and assumptions checked. Everything else on this sheet is the same.

The mistakes that cost the most marks

Crit.	Mistake	Fix
A	No clear aim	State a precise question in one or two sentences near the start, and answer it in the conclusion.
A	Writing for the teacher, not a peer	Explain every step so a classmate who has not studied your topic could follow.
B	Calculator notation	Write x^2 , $e^{(kt)}$ as a proper exponent and $\times$, never $^$, $*$ or E .
B	Undefined variables	Define each variable, with units and domain, the first time it appears.
C	Engagement only in the introduction	Add predictions, questions and decisions throughout the mathematics.
C	A textbook exploration	Change the question, data or method until it is recognisably yours.
D	Reflection only at the end	Add a short reflection after each major result.
D	Generic limitations ("human error")	Name the limitation that most affects your answer and estimate its effect.
E	Line of best fit without r	Calculate and interpret the correlation, and justify a linear model, before drawing any line.
E	Answers without working	Show reasoning and explain technology output; a correct answer alone scores very little.

Self-assessment grid

For each criterion, estimate your band honestly, then write the one change that would move you up.

Criterion	My band	Evidence (page / section)	One change to move up
A · Presentation	/ 4		
B · Mathematical communication	/ 4		
C · Personal engagement	/ 3		
D · Reflection	/ 3		
E · Use of mathematics	/ 6		

Criterion	My band	Evidence (page / section)	One change to move up
Total	/ 20		

Academic integrity and AI

- ☐ Everything in the IA is my own work, in my own words, and I can explain every step.
- ☐ Every source (data, quotes, images, ideas) is cited where I use it and in the bibliography.
- ☐ Any tool I used — including AI — is acknowledged: which tool, what for, and when. I have kept my prompts.
- ☐ No part of any exemplar or anyone else's IA has been copied.

This checklist is our own guidance, written from the student sheet Pete uses in his teaching. It is not the IB's wording and is not produced or endorsed by the International Baccalaureate Organization — the official level descriptors are in the subject guide your teacher uses. More help: ibmathrevision.com/ia — ideas, criterion guides, exemplars, a planner and AI feedback on your draft.