

## 2. Get to know your exam paper

This chapter will help you to understand the main features of the exam papers, along with some advice on approaching your exams.

### General

- Your IB exam consists of two written papers, each worth 40%. The final 20% of your IB mark is from your portfolio.
- Each paper is worth 90 marks and each is 90 minutes long. Both papers are divided into two sections, A and B. Each section is worth 20% of your final mark.

#### Section A

- Section A consists of short response questions and is intended to assess knowledge and understanding over a broad number of topics on the syllabus.
- A small number of steps will be required to answer each question.
- Questions will not necessarily carry the same mark and you should not assume that equal emphasis will be placed on each syllabus topic.
- Questions will be ordered according to difficulty. That is, questions at the beginning of this section are intended to be easier than those near the end of the section.

#### Section B

- Section B consists of extended response questions and is intended to assess knowledge and understanding of topics in more depth.
- Each question may require knowledge of more than one topic and may be presented in a variety of forms.
- Questions in this section will also be set in order of increasing difficulty.

### Paper 1

- You may hear paper 1 referred to as the “non-GDC paper”; however, throughout this book we will call it “paper 1”.
- You are not allowed any type of calculator for this paper. Therefore, the emphasis will be on analytical approaches. For example, are you able to find the equation of a tangent to a curve, or can you multiply matrices without using a GDC? (We highlight some analytical approaches throughout the book.)
- Questions requiring a significant amount of manual calculation will not be set. Marks are awarded for knowledge of the syllabus, not for whether you can multiply three-digit numbers without a calculator.
- Knowledge of all syllabus topics is required for this paper.

### Paper 2

- You may hear paper 2 referred to as the “GDC paper”; however, throughout this book we will call it “paper 2”.
- For this paper, you must have access to a GDC. Questions will be set that expect you to use a GDC as the primary approach, but not every question will necessarily require its use.
- When approaching questions on this paper, select and **provide evidence** of an appropriate mathematical set-up, then go to your calculator.

- You will normally be rewarded for efficient and effective use of a GDC and should be aware that analytical approaches can often be more tedious and lengthy on this paper. It is up to you to decide which approach is best. The number of marks available for a question can be a very good indicator of how you should proceed.
- There are areas in the syllabus that expect the use of a GDC. For example, if you are asked to find a standard deviation, use your GDC! Valuable time is lost if you do not know when to use your calculator.
- Knowledge of all syllabus topics is required for this paper.

## Approaching the exam papers

### Study all syllabus topics

- When papers are set, every effort is made to write questions that assess your knowledge of the entire syllabus.
- Re-familiarize yourself with the presumed knowledge. Although questions will not explicitly assess your understanding of this material, you may need to draw upon it to answer questions. For example, you may be expected to apply your knowledge of the trigonometry of right-angled triangles to answer part of a question.
- Questions may be presented in the form of words, symbols, diagrams or tables, or combinations of these.
- Mathematics is a “pencil sport”, so prepare by doing! Although it is important to prepare from past IB exam questions, never assume that your exam will be easier or more difficult than previous exams.

### Read the instructions

- On both papers, questions in section A can be answered directly in the spaces provided on the exam paper, while questions in section B must be answered on a separate sheet of paper using a new page for each question.
- Answers on both papers must be given exactly or rounded correctly to three significant figures unless otherwise specified in the question. Failure to do so results in an accuracy penalty. You may lose up to a maximum of one mark on **each** paper for incorrect rounding or accuracy.
- Show your work! You are expected to show your working on **both** papers. Answers given without working may not receive full marks. Incorrect answers with no working are not awarded any marks. Attempts to use a correct method are often awarded method marks, even if you have not carried out the approach correctly.
- Finish your answers! Unfinished answers such as  $3/0.1$  or  $\left(\frac{5}{2}\right)$  will not receive full marks.

## How marks are awarded

Later on in the book you will come across marking abbreviations that you may not be familiar with (if you are not familiar with these, check with your teacher). The following table can be used as a guide to help you understand how marks are awarded to students.

<b>M</b>	Marks awarded for attempting to use a correct <b>method</b> . Work must be shown to achieve this mark.
<b>A</b>	These are marks awarded for an intermediate and/or final <b>answer</b> . They are normally dependent on a preceding M mark. For example, correct substitution into a formula or correctly integrating a function would be awarded A marks.
<b>N</b>	Marks that are awarded for correct answers with <b>no working</b> . As we normally expect students to show working, the number of N marks available for a question may be less than the total number of marks available for that question.
<b>R</b>	Marks awarded for clear mathematical <b>reasoning</b> .
<b>ft</b>	These are <b>follow-through</b> marks awarded where an incorrect answer from one <b>part</b> of a question is used correctly in <b>subsequent</b> part(s) or subpart(s). To be awarded ft marks, <b>you must show your work</b> and not just a final answer based on an incorrect answer to a previous part.
<b>AG</b>	This stands for <b>answer given</b> in the question and no marks are awarded. These marks appear mostly in “show that” questions.
<b>AP</b>	An <b>accuracy penalty</b> is applied for incorrect rounding, or for answers not given exactly or to three significant figures. This mark can be deducted once per paper.