

## Mathematics Assignment 1

### Higher level Applications and Interpretations 26 June 2021

Getting ready for IB Applications and interpretations Maths studies Higher Level.

The IB course starts by assuming that you understand a number of key techniques which you encountered when studying GCSE Mathematics. You need to be fluent in manipulating numbers, certain algebraic techniques and some shape and space techniques.

Watch the video, complete, and mark the questions using the links below.

Grade 6 + topics		
Questions	Tutorial	Answers
<a href="#">90. Circle Theorems</a>	<a href="#">Video</a>	<a href="#">Answers</a>
<a href="#">91. Cumulative Frequency and Box Plots</a>	<a href="#">Video</a>	<a href="#">Answers</a>
<a href="#">93. Recurring Decimals</a>	<a href="#">Video</a>	<a href="#">Answers</a>
<a href="#">94. Fractional and Negative Indices</a>	<a href="#">Video</a>	<a href="#">Answers</a>
<a href="#">95. Surds</a>	<a href="#">Video</a>	<a href="#">Answers</a>
<a href="#">97. Upper and Lower Bounds</a>	<a href="#">Video</a>	<a href="#">Answers</a>

In the past, many students have encountered difficulties with the transition between GCSE and IB Applications and Interpretations. To avoid these difficulties, it is imperative that you are fluent in the required skills before starting the course in September. There will be an assessment test during the first fortnight of the course to ensure all students are at the required level.

You will also need to purchase a scientific calculator and the course books, please contact Head of Maths if you are experiencing financial hardship.

### Books and equipment

We will be using the Haese Applications and Interpretations Higher books, which are available for purchase from the links below, you may however find second hand copies from companies such as Amazon or ebay.

<https://www.haesemathematics.com/books/ib-hl-applications-interpretation-bundle> or if you prefer the books can be purchased separately

Book 1 is required from September 2021

<https://www.haesemathematics.com/books/mathematics-core-topics-hl>

Book 2 required by February 2022

<https://www.haesemathematics.com/books/mathematics-applications-and-interpretation-hl>

You will also require a Graphic calculator (your class teachers use TI-84 Plus CE-T)

**Notes:**

- Any devices with unrestricted/candidate accessible WiFi functionality are not permitted.
- Other calculators which have features that do not appear on any of the recommended models **and/or** have functionality that is exclusive to the prohibited calculators (and not blocked during the examination) are not allowed.
- Candidates may not use or store data/notes, programs or flash (ROM) applications (Apps) in their calculators that may assist them in an examination by removing the need to recall facts or formulae.

## Recommended calculators

The following models meet the minimum requirements for mathematics subjects and have updated and time-saving functionalities not found on other models.

<b>Texas Instruments</b>	TI 84 Plus – all models	TI 83 Plus
	TI Nspire (non-CAS), with 84 faceplate	TI 83 Plus silver edition
	TI-Nspire (non-CAS models) <ul style="list-style-type: none"> <li>TI-Nspire CX II / CX II-T (OS version 5.0 or higher)</li> <li>TI-Nspire CX (OS version 4.5.1)</li> <li>TI-Nspire (OS version 3.9)</li> </ul>	All TI-Nspire models must be updated to the latest Operating System (OS) as indicated.
	TI-Nspire ( <b>selected</b> CAS models) with CAS mode disabled <ul style="list-style-type: none"> <li>TI-Nspire CX II CAS (OS version 5.0 or higher)</li> <li>TI-Nspire CX II-T CAS (OS version 5.0 or higher)</li> <li>TI-Nspire CX II-C CAS (OS version 5.0 or higher)</li> </ul>	All TI-Nspire models must be placed in "Press-to-Test" mode with the correct features blocked (see list below).
<b>Hewlett Packard</b>	HP Prime updated to the latest firmware in "Exam Mode", with the correct features blocked (see list below)	
<b>Casio</b>	FX 9750G Plus or GII	FX 1.0 Plus
	CFX 9850 Plus	Graph 35 Plus / 35+E / 35+E II
	CFX 9950 Plus	Graph 65 Plus
	FX 9860G /FX 9860G SD /FX 9860G AU	Graph 85 series
	FX 9860GII / FX 9860GII SD / FX 9860G AU PLUS updated to the latest operating system for IB examinations in "Examination Mode"	
	Graph 75 / Graph 95 updated to the latest operating system for IB examinations in "Examination Mode"	Graph 90+E, in "Examination Mode"
	FX CG10/20 updated to the latest operating system for IB examinations in "Examination Mode"	FX CG50, in "Examination Mode"

See "Necessary actions with recommended calculators" below for guidance on ensuring these recommended calculators meet requirements.

## Prohibited calculators

The following models are not allowed in examinations under any circumstances.

<b>Texas Instruments</b>	TI Voyage 200 (all versions)	TI 89 (all versions)
	TI 92 (all versions)	Older CAS models: <ul style="list-style-type: none"> <li>TI-Nspire CX CAS</li> <li>TI-Nspire CAS</li> </ul>
	TI-Nspire models that are <b>not</b> updated to the latest operating system	
<b>Hewlett Packard</b>	HP 38-95 (all versions)	
<b>Casio</b>	Classpad (all versions) / FX CG500	Graph 100
	FX 2.0 (all versions)	FX 9970 (all versions)
	FX 9860GII / FX 9860GII SD / FX 9860G AU PLUS <b>not</b> updated to the latest operating system	
	Graph 75 / Graph 95 <b>not</b> updated to the latest operating system	
	CG series - FXCG10/20 <b>not</b> updated to the latest operating system	

Mathematics HL

A GDC with the following minimum functionalities is required on all other papers:

- draw graphs with any viewing window
- solve equations numerically
- find a numerical derivative at a point
- find a numerical definite integral
- financial package
- find statistical values including:
  - normal distribution
  - binomial distribution
  - Poisson distribution
  - t-distribution
  - binomial coefficient  $\binom{n}{r}$ ,  $nPr$
  - 1 and 2 var stats
  - chi squared values (including  $p$  values)

Examiners will set questions assuming that all candidates have a GDC with the minimum functionalities listed here. Candidates using only four-function or scientific calculators, or using a less able GDC, will be at a disadvantage.