Joint Council for Qualifications CIC

FAQs – Using calculators

Produced on behalf of:

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Why have the instructions about using calculators been updated?

Section 10 of ICE has been updated for 2023-24 to provide more clarity to candidates, exam officers and teachers given recent changes in technology.

What has changed in the *Instructions for conducting examinations* for 2023-24?

Below is an explanation of the changes:

Updated guidance	Explanation of the change
10.1 A calculator is defined as an electronic device whose primary purpose is to carry out mathematical calculations.	This statement has been added to clarify, for example, that mobile phones which have an in-built calculator cannot be used.
10.2 This is the published guidance on calculators unless specifically varied by an awarding body in the qualification specification.	This statement has been added to clarify that awarding bodies' specifications can include statements to waive specific elements of the regulations.
10.6 During an examination calculators must not be able to offer any of these facilities:	The wording 'during an examination' has been added to cater for graphical calculators that become compliant when they are put into 'exam mode'. The wording 'designed or adapted' has been removed to cater for graphical calculators that may have been designed to offer some of the listed prohibited functions but **do** become compliant when they are put into 'exam mode'. **There is no change to the list of functions prohibited in examinations.**
10.7 a) databanks, such as the periodic table (with the exception of scientific constants);	Periodic tables have been mentioned as some graphical calculators have an in-built periodic table. These calculators may still be used in examinations using 'exam mode'. Further guidance on this is given below. 'With the exception of scientific constants' has been added to clarify the position where scientific calculators have values, such as Avagadro's Constant and Acceleration due to Gravity. These are allowed in examinations. **There is no change to the other pre-stored information listed in 10.7 that must not be accessible from calculators.**
10.9 Some calculators have an 'exam mode'. This is acceptable in examinations where the exam mode is activated and the exam mode results in the calculator becoming compliant with the above requirements.	This statement has been added to clarify the use of 'exam mode'.

Are graphical calculators allowed in examinations?

Graphical calculators are allowed for all examinations, unless specifically prohibited in the awarding body's specification, provided they are compliant with ICE. Due to the complex nature of graphical calculators, early conversations with candidates who have graphical calculators is recommended. Centres can then be confident that the graphical calculators are compliant.

Can an 'exam mode' be used to make a graphical calculator compliant with ICE?

Many graphical calculators come with an exam mode which locks down prohibited functions such as any storage facility. This gives centres the confidence that candidates have not stored material prior to the examination. Centres should refer to the manufacturer's website to see if a graphical calculator has an exam mode which will ensure compliance.

Some graphical calculators need to be connected to another calculator of the same type, to exit exam mode. For some, the exam mode will last for a specific period, such as 12 or 24 hours. It is important the calculator is in exam mode for the whole of the examination. Some centres ask candidates to demonstrate putting the calculator into exam mode just before the examination. Some calculators have a flashing border on the display for the first 15 minutes to give confidence that the exam mode will last for the next 12 hours.

For some graphical calculators pressing the reset button on the rear of the calculator will only reset the main settings and not clear any data, programs or text stored in memories.

Are apps or websites that can graph mathematical functions allowed in examinations?

No. Devices that can communicate with other devices, or the internet, are not allowed in examinations. Tablets and phones with mathematical apps are not allowed. As these are external programmes or websites they are prohibited by ICE.

Is there a list of calculators that are allowed in examinations?

No. Due to the extensive range of calculators available, it is not possible to put together a full list of calculators that are allowed in examinations.

Is there a comprehensive list of calculators which are not allowed in examinations?

No. The awarding bodies cannot comment on any specific calculator due to their complex functionality and the wide variety of makes and models available on the market.

Centres should be aware that there are calculators which are web-enabled which have been designed to appear the same as non-web enabled calculators (for example the 'Ruby calculator': **https://www.kspyworld.com/product-page/RubyCalculator**). There are also calculators specifically designed to enable candidates to 'cheat' in examinations. Centres should familiarise themselves with the most common calculators.

Centres should have conversations with candidates, especially with those who have graphical calculators. They can then be confident that candidates' calculators are compliant with ICE.

Can candidates take more than one calculator into an examination?

Yes. There is nothing to prohibit candidates taking more than one calculator into an examination.

Are calculators which can perform numerical integration and differentiation allowed?

Yes. Only **symbolic** algebraic manipulation and **symbolic** calculus are not allowed.

Symbolic algebra and calculus mean that the calculator will show the algebraic stages of the solution. These will often have an indication of being a CAS (Computer Algebra System) on the case. Calculators which perform numerical integration and numerical differentiation, to only produce a numerical answer, can be used in examinations. An example of this would be to calculate the numerical answer to a definite integral without showing the algebraic stages.