

The **regulations for the use of calculators in examinations** can be found on page 13 of the Joint Council for Qualifications (JCQ) booklet "**Instructions for conducting examinations (1 September 2017 to 31 August 2018)**", which in turn can be found on the JCQ website at www.jcq.org.uk.

Using calculators

For question papers where the use of calculators is allowed, candidates are responsible for making sure that their calculators meet the awarding bodies' regulations.

The instructions set out in this section apply to all examinations unless stated otherwise in the appropriate awarding body's subject-specific instructions.

Candidates should be told these regulations beforehand and be familiar with the *Information for Candidates* documents.

Calculators must be:

- of a size suitable for use on the desk;
- either battery or solar powered;
- free of lids, cases or covers which have printed instructions or formulas.

Calculators must not:

- be designed or adapted to offer any of these facilities:
 - language translators;
 - symbolic algebra manipulation;
 - symbolic differentiation or integration;
 - communication with other machines or the internet.
- be borrowed from another candidate during an examination for any reason (an invigilator may give a candidate a replacement calculator)
- have retrievable information stored in them - this includes:
 - databanks;
 - dictionaries;
 - mathematical formulas;
 - text.

The candidate is responsible for the following:

- the calculator's power supply;
- the calculator's working condition;
- clearing anything stored in the calculator.

Advice:* An invigilator may give a candidate a replacement calculator.

Where access is permitted to a calculator for part of an examination, it will normally be acceptable for candidates to place their calculators on the floor under their desks in sight of the invigilator(s) for the non-calculator portion of the exam.

Note that these regulations apply to **GCE, GCSE and International GCSE Mathematics** examinations.

Note also that the regulations above say that "**calculators should not have retrievable information in them - this includes... mathematical formulas and text.**" Thus many models will need to have their memory cleared before they can be taken into the examination. In the case of the Texas TI-84, for example, they have a built in press-to-test feature designed specifically for this purpose. If you or another teacher enable the feature before the exam the student won't be able to disable it, without connecting to a second handheld, or computer.

The crucial **prohibitions** above are to do with calculators which can perform **symbolic algebra manipulation and/or symbolic differentiation or integration** or can communicate with other calculators or the internet; such calculators are still quite expensive and the ones I know about include:

Casio: Algebra FX2.0, Algebra FX2.0 PLUS, ClassPad 300 (all models)
Hewlett Packard: HP 40G, HP 40GS, HP 48G, HP 48G II, HP 49G, HP 49G PLUS, HP 50G, HP Prime
Texas Instruments: TI-89, TI-89 (Titanium), TI-92, TI-92 PLUS, Voyage 200, TI-*n*spire CAS

This isn't an official list, it's based on what I know of these calculators and my interpretation of the JCQ rules. There is no list of calculators which *can* be used, though it can probably be assumed that any calculator that is not on the list above is permissible. This includes graphical calculators, those which can perform numerical differentiation and integration, manipulate matrices, change bases, etc.

Wherever possible we try to set questions which obviates any advantage a student may obtain from such calculators – a basic scientific calculator should be considered sufficient for the demands of the GCSE, International GCSE and legacy AS and A level papers (units C2-C4, M1-M5, S1-S4 and D1-D2; C1 is a non-calculator paper).

Students for the new linear AS and A level Mathematics examinations are expected to have a calculator with both an iterative function and the ability to compute summary statistics and access probabilities from standard statistical distributions.

Students for the new linear AS Further Mathematics examinations are expected to have a calculator with the an iterative function, the ability to compute summary statistics and access probabilities from standard statistical distributions and the ability to perform calculations with matrices up to at least order 3 x 3.

The most popular models to meet these requirements are the **Casio fx-991ex Classwiz** and the Texas 30 plus. There may well be others, however.

Students are allowed to take more than one calculator into the examination.

I hope you find this helpful,

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