

# Maths Emporium *Guides to Life:* GCSE Mathematics examinations

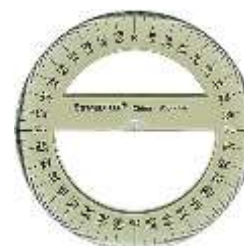
## Before the examination:

**Equipment.** The front of the examination paper says you should have a ruler graduated in centimetres and millimetres, a protractor, a pair of compasses, a pen which works, a sharp HB pencil, an eraser and a calculator. Chances are that you will need to use all of these in the examination, so make sure you have them with you in a suitably modest pencil case. Gather them together in plenty of time – don't be trying to find all these items the night before, or on the morning of, the examination.

**Ruler:** best to have one that's transparent with cm and mm graduations. Leave your gran's wooden ruler graduated in fractions of inches in the drawer where you found it. Flexible curve rulers (as pictured right) are **not** permitted and there's no reason you'd need one; the same goes for French curves.



**Protractor:** A 180° version (left) will be sufficient, but 360° protractors (right) are permitted. Those that convert degrees in a circle to percentages (for example  $90^\circ = 25\%$ ) are **not** permitted in the exam.



**Pair of compasses:** Some people are very insistent that the correct term "pair of compasses" is used". So use

This pair:



Not this pair:



You're likely to need a pair of compasses for any questions to do with constructions, loci or bearings. Make sure your pencil isn't too thick to be used with the pair of compasses you have. Get some practice drawing circles and arcs before the examination.

**Pen:** The front of the exam paper says to use black ink or ball-point pen. I expect few students use fountain pens in the exam these days but everyone can, and should, have a black ballpoint pen. Examination scripts are all scanned to be marked on computer screens and black ink shows up best; don't risk anything being missed by the scanners using blue ink. As for green or pink (not unknown), remember you're in an exam – take things seriously. And red? – unless you're marking the exam (which you're not), avoid red at all costs.

Take more than one black pen with you, just in case something goes wrong with the first one. And another, just in case something goes wrong with the second one.

**Pencil:** Use an HB pencil – not an H, which is too hard and might be too faint for scanners to pick up and not a B, which is too soft and may not be precise enough for graphs and diagrams. HB is the Goldilocks of pencils – just right. Use pencils for sketches, graphs and diagrams. Use **black** ink for everything else.

**Erasers:** Used for rubbing out pencil marks, which is why we used to call them rubbers. You will need one in case your sketches, graphs or diagrams don't come out perfectly first time.

**Calculators:** Most commercially available calculators can be used in GCSE examinations, including graphical calculators, but only a basic scientific calculator is required. The Casio fx991-ex Classwiz may be used.



If you have any doubts, find out in plenty of time from your teacher whether your calculator can be used in the examination. Don't try to find out the night before, or on the morning of, the calculator exam – people at the exam board who might know the answers can be hard to reach on exam days.

Make sure your calculator is charged up and that you have some spare batteries if needed, or even a spare calculator. Make sure you know how it works and that it is set for calculations in **degrees** (not radians or gradians – you can learn about those functions once you have passed your GCSE).

**Tracing paper:** The front of the examination paper says that tracing paper **may** be used. Some schools will provide this, though it doesn't mean you will need to use it. Tracing paper should not be appended to scripts at the end, so don't use it as paper for working out.



**Highlighter pens:** You may take these into the exam if they are useful for highlighting key words in questions. However, you shouldn't use them for any part of your answers; they might not scan very well or might obscure the answers you are intending to highlight.

**Anything else:** If it's not on the list, it can't be taken into the exam hall. So no mirrors (or bits of card that act like mirrors), no multiplication squares, no slide rules or log tables (for the old folk), no isometric paper, no stencils.

If it's not on a list of things that aren't allowed, don't assume it is allowed. There's nothing in the regulations that says you can't take an elephant into the exam hall, but most people know not to try. There are exceptions for students with special requirements to take in special equipment, but they need to be agreed well in advance by your school or college.

**Food and drink:** Some schools and colleges will allow you to take this in, some won't. It's only two hours, you won't actually expire without such sustenance – but if it's important to you, find out from your institution their policy well in advance.



**Mobile phones:** Does this need to be mentioned? Leave them outside the exam hall. The Joint Council for Qualifications (JCQ) produces a poster which you might see outside the exam hall – no i-pods, i-pads, i-phones or i-watches. Maybe best not to take in anything beginning with i (tough on anyone who uses an inhaler, perhaps, but you can't be too careful).

No android versions of those either, and certainly no actual androids (though we probably would be secretly impressed if you pulled that off).



## During the examination:

**Examiners:** Always remember that examiners are human beings, not mind-reading robots. They are looking to give you marks where they can, so make that as easy as possible for them to do. Write your calculations, working and answers clearly and logically so examiners can follow your arguments. The examination is not the time to showcase a new kind of notation or fancy handwriting styles.

**Working:** Your teachers have no doubt told you this, but make sure you write down all your working out; you'd be surprised how many marks you can lose by not doing so. There is no need to be embarrassed by anything you might write; all papers are marked anonymously and all papers are burned after six months. Remember, though, that your school or college might opt to ask for your exam script as part of any review process, so don't go mad.

If you need to cross anything out, just put a single line through it – don't use all the ink in your pen (and a lot of time) utterly obliterating what you have written.



Make sure answers are realistic – for example, gas bills don't tend to run into thousands of pounds, no-one walks 400 miles in a day and people are not 10 metres tall.

**The Exam Paper:** The paper has been designed so that you should have more than enough space to answer each question. Don't write below the line at the end of the question – that part will not be scanned and examiners will not see anything you write there.

You should only ask for extra paper if it is absolutely necessary, for example if you have to completely re-write a question. Make sure any extra pages are securely attached to your exam paper. Do not use extra pages for working out; all working should be written on the examination paper.

Make sure you check the last page or back page – it often has a question on it and this shouldn't be missed. If it says **BLANK PAGE**, that's been put there so you know that we know it's blank and there hasn't been a printing error.

**Formula sheets:** There won't be a formula sheet with the examination paper. You may have been used to seeing one when trying out past papers, but now you will need to know them. Make sure in advance that you know what formulas you are expected to remember and be able to use. You will be given the formulas for the volume and/or surface area of a cone and/or a sphere if it is required.

Everything in the examination paper will be correct – it will have been revised and proof-read many times before you see it. Don't waste time asking a teacher or an invigilator to ring the exam board if you don't understand the question – instead, spend the time trying to figure it out. Apart from anything, by the time an invigilator has got through to the exam board on exam day and then got back to you, the exam will probably be over.

If you can't proceed, whether you think the question is wrong or that you just don't know what to do, leave it and come back to it at the end if you have time.

**Time:** Depending on which paper you are taking, you'll have between one and two hours to complete all the questions on the examination paper; this will seem like no time at all to most students, although to a few it will seem like an eternity.



Whatever it feels like, use all the time you have – you have nothing else you can do in the exam hall except to try to answer the questions on the examination paper. Every minute counts and every mark you achieve might be the one which takes you from a grade 3 to a grade 4 or a grade 8 to a grade 9.

Any time you have left at the end should be used for going through your paper looking for daft errors. For example, check you have copied any final answer of your working into the answer line correctly; make sure instances of simple addition and multiplication are correct; make sure you have given a reason for your answer if you have been asked for one. Make sure that if you have been asked the best buy on a packet of soap powder, for example, you have actually said which one it is.

If you have time, have another look at questions you weren't able to answer – perhaps part (a) isn't that difficult after all. And if it is, perhaps you can answer part (b) anyway.

Every minute counts – so don't use them up producing elaborate (or indeed simple) doodles, or writing long notes to examiners. Crucially, don't spend any time thinking about how funny you will be on Twitter after the exam. Just get on with it.



All of the above has been based on what past students have done or haven't done – if you can learn from their mistakes, it might make the difference between the grade you want and the one you don't. Good luck!

Soon enough it will be all over and you will be allowed out...

