



Step by Step Maths
GCSE Revision Course: Graphs
Christmas Holiday 2023



December 19 th 10:00-12:00	
A9	Plot graphs of equations that correspond to straight-line graphs in the coordinate plane; use the form $y = mx + c$ to identify parallel and perpendicular lines ; find the equation of the line through two given points or through one point with a given gradient
A10	Identify and interpret gradients and intercepts of linear functions graphically and algebraically
December 20 th 10:00-12:00	
A11	Identify and interpret roots, intercepts, turning points of quadratic functions graphically; deduce roots algebraically and turning points by completing the square.
A12	Recognise, sketch and interpret graphs of linear functions, quadratic functions, simple cubic functions, the reciprocal function $y = \frac{1}{x}, x \neq 0$, exponential functions $y = kx$ for positive values of k, and the trigonometric functions (with arguments in degrees) $y = \sin x, y = \cos x$ and $y = \tan x$ for angles of any size.
December 21 st 10:00-12:00	
A13	Sketch translations and reflections of a given function
A14	Plot and interpret graphs (including reciprocal graphs and exponential graphs) and graphs of non-standard functions in real contexts to find approximate solutions to problems such as simple kinematic problems involving distance, speed and acceleration
December 28 th 10:00-12:00	
A15	Calculate or estimate gradients of graphs and areas under graphs (including quadratic and other non-linear graphs), and interpret results in cases such as distance-time graphs, velocity-time graphs and graphs in financial contexts (this does not include calculus)
December 29 th 10:00-12:00	
A16	Recognise and use the equation of a circle with centre at the origin; find the equation of a tangent to a circle at a given point
	Catch-up / review / and final questions

This course, for students taking GCSE Maths Higher tier, has 3 sessions before Christmas and 2 afterwards. There is a total of 10 hours teaching covering the whole of the Higher-Tier **Graphs** section of the Edexcel MA1 syllabus which is about a third of the Algebra content. The Higher tier only content is in bold. The course will incorporate questions from past papers.

The cost is £300. This course will run with three participants. If it is oversubscribed, I will also offer a duplicate course on the same days 2.00 pm - 4.00 pm.

This is a revision course so I will assume that students will be familiar with, although not mastered, much of the content. There will be a pre-course assessment, so I'll be able to find out what participants already understand and where to focus particular attention. There will be optional follow up work. Participants will need a good internet connection, a printer, an email address and a mobile phone (to send WhatsApp images of workings). Material for printing will be shared by Zoom chat.

If you are interested, please contact me by email (chris@chrisoffettmaths.co.uk) to set up a phone call to discuss.