2024 Specialist Maths Orientation Challenge

Work in a pair (ideally) or maybe group of three. Make sure your pair/group are all starting the same course (Units 1 and 2, or Units 3 and 4).

Graph the following equations for the given domains.

$$y = 10x, x \in [0,1]$$

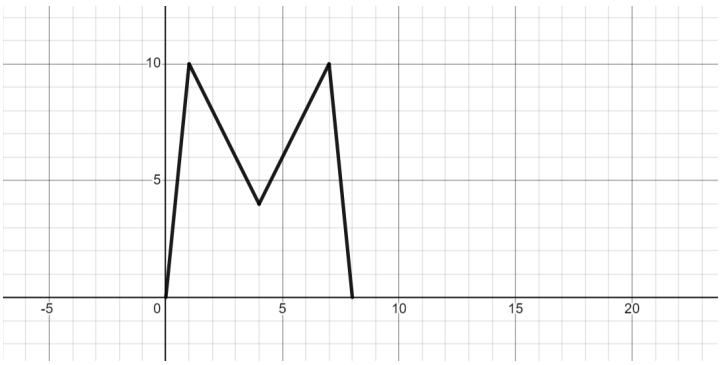
$$y = -2x + 12, x \in [1,4]$$

$$y = 2x - 4, x \in [4,7]$$

$$y = -10x + 80, x \in [7,8]$$

You can use your calculator, or you might like to make use of a larger display by using an online graphing calculator such as Desmos or Geogebra.

Hopefully, you have something that looks similar to this:



So now the challenge begins…

Can you add graphs to write ‘Maths’ rather than just an ‘M’?

Maybe you can go further and try to write ‘Specialist’ too – you can choose whether it should come before or after ‘Maths’!

Rules:

- No cheating by actually drawing on a screen – equations only!
- Aim for as wide a variety of equations as you can. Don’t just use straight lines and a few circles. At a minimum, make use of quadratic and cubic functions, something exponential, and something trigonometric. If you’ve already completed Units 1 and 2, make use of some of the newer functions you were introduced to there.
- Save your work in some format that allows both your graphs and equations to be seen.