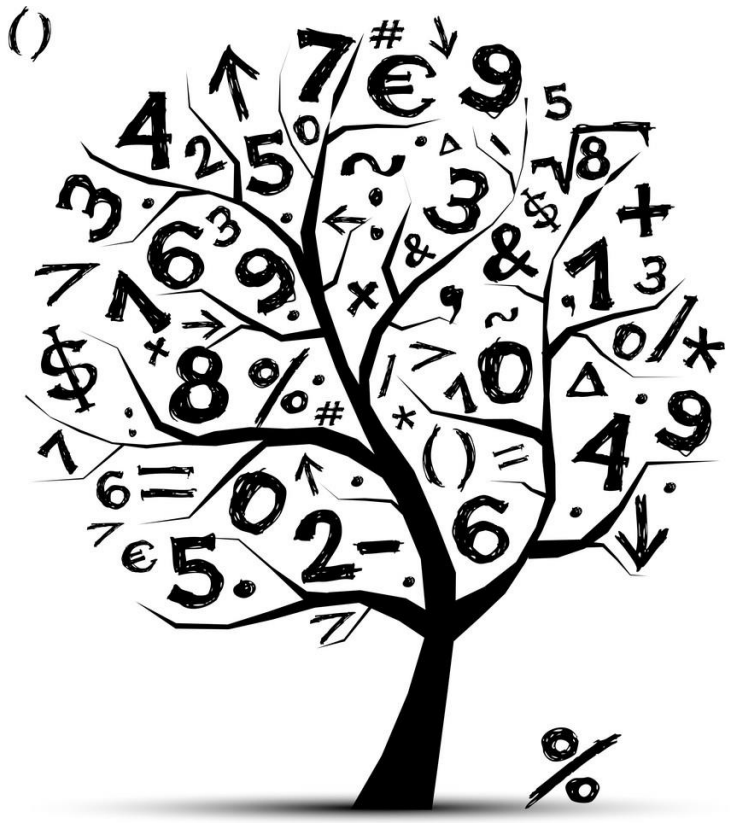
COURSE NAME: A-Level Further Maths
Course Team Leader: Steve Warr
Email Address: swarr@longroad.ac.uk

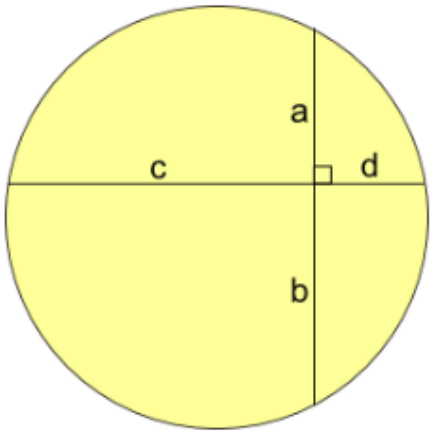
A level Further Maths

Summer Work



Please submit this work on lined paper in your first further maths lesson.

As a Further Mathematician, we would like you to attempt three additional problems as well as the mathematics summer work. Before you start, please click on the link to view a video introduction to the summer work. The further maths section starts at a time around 14:15. All the knowledge you need, you knew at GCSE. The key is can you select the correct knowledge required to solve each problem – this is a skill that is crucial for studying Further Maths! Write your answers, together with lots of lovely working, on paper ready to hand in during your first maths lesson. Can you solve these ***three problems*** and describe ways in which each might be connected to one or both of the others?

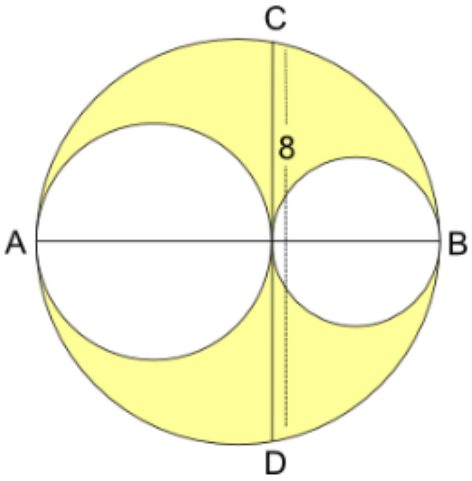


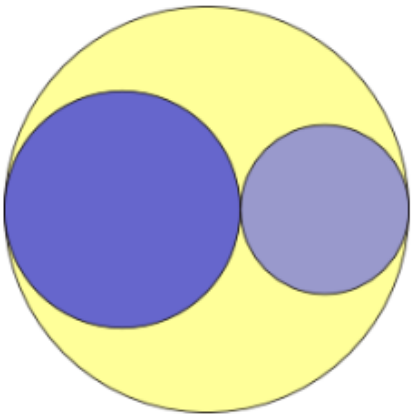
Firstly :

Why does ab = cd?

Secondly:

These three circles are drawn so that they touch each other and their centres are all on the line AB.
If CD is 8 units in length, what is the area of the part that is shaded yellow?





Lastly:

If the area shaded yellow is equal to the area of the larger of the two circles that are shaded blue, what is the relationship between the radii of the three circles?