

Question 6 - 5 marks

Before attempting this question, you might like to look at the first Exercise Booklet for the Geometric Topology half of the course, where the terms 'sketch' and 'simpler' are defined.

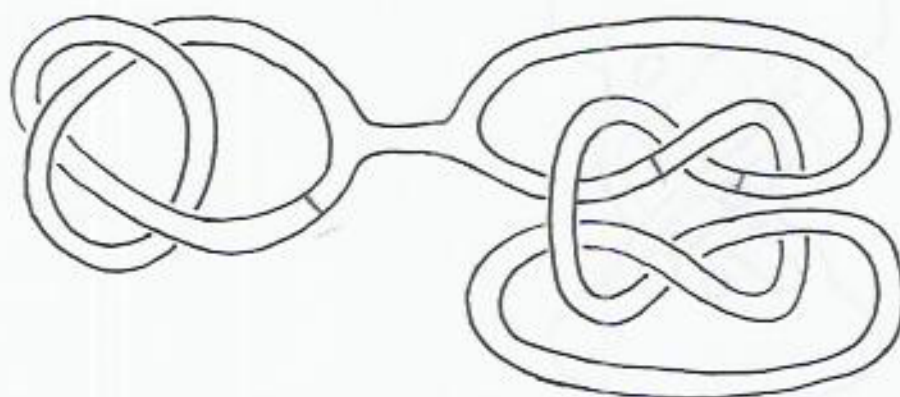
Sketch simpler versions of the following surfaces. In each case explain, preferably with a sketch, how you arrived at the simplification. Both the surfaces are made of thin paper.

(i)



[2]

(ii)

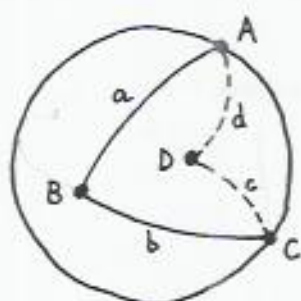


[3]

Question 7 - 15 marks

For each of the following surfaces, add any vertices or edges you feel are necessary to obtain a subdivision. State which, if any, of the rules on page 27 of Geometric Topology Unit 1 were not satisfied by the original figure. Clearly label each vertex and edge that you add.

(i)



$X = Z -$

A sphere with four vertices and edges of an inscribed tetrahedron