The Shape of Space - Part 3 - Classification of Surfaces

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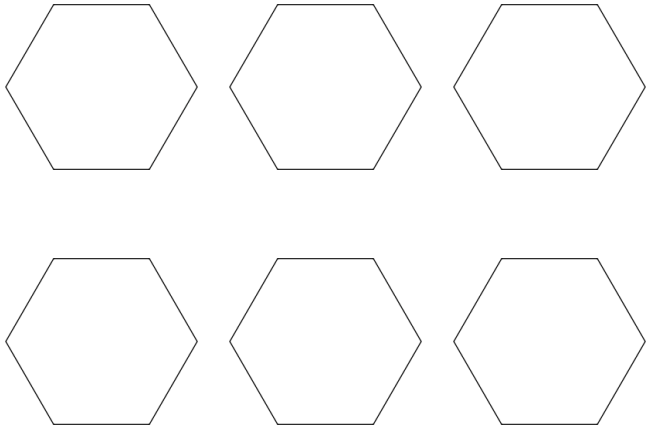
11 Even More Gluing Diagrams

39. (a) Which of these gluing diagrams represent orientable surfaces and which represent non-orientable surfaces?
    (b) Which gluing diagrams represent the same topological surface?
    (c) Name the surfaces represented.
    (d) What are all the other essentially different ways to make a gluing diagram with a hexagon? Can you get any additional surfaces?



40. What do you get when you glue a disk (i.e. the inside of a circle) to the boundary circle of a Mobius band?

41. Which two surfaces are obtained by gluing the edges of each triangle as shown? You get two different surfaces, one for each triangle. Side b is not glued to anything.