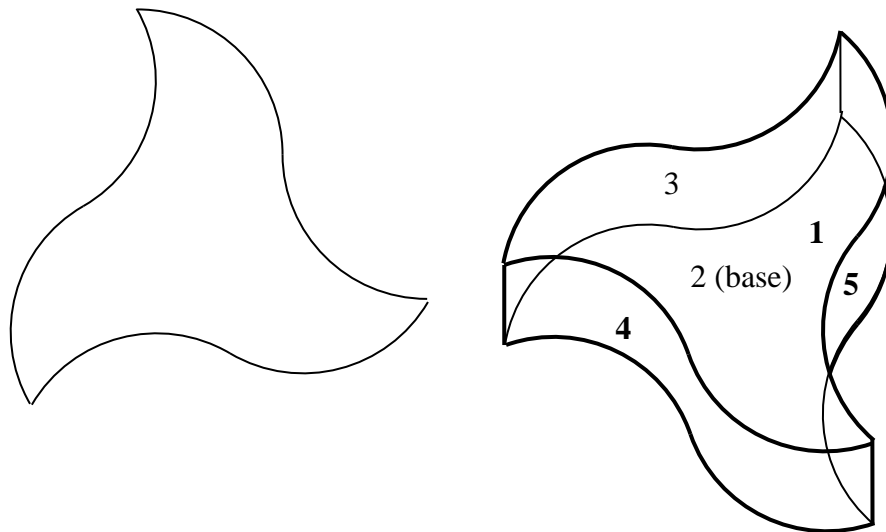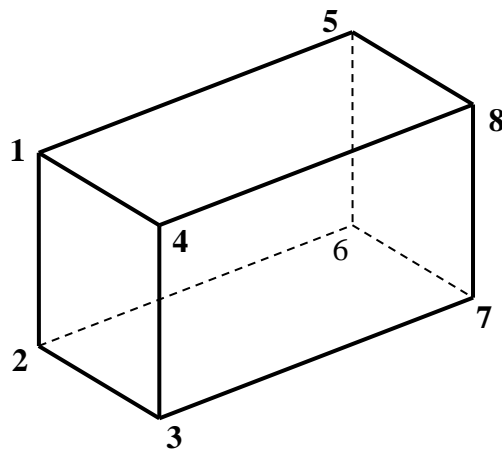1

The top of a tile in the Alhambra Palace is shown on the left.
A solid with this cross-section is on the right. The top is labelled 1, the base 2 and the vertical curved faces are 3, 4 and 5.

2

The above diagram illustrates a cuboid with a square cross-section. In this case the vertices have been numbered.

For each of these figures, determine the number of symmetries and express these as permutations of the numbers in the figures.

Write down the conjugacy classes for each and will then try to find, for each possible non-trivial order, an example of a normal and a non-normal subgroup.