

Assistant:

Mircea Trif – Office 4.4 – Tel. 061 267 36 56 – Mircea.Trif@unibas.ch

Exercise 1.

Proof the following theorems:

- a) A group has only one identity element.
- b) Every element of a group has only one inverse.

Exercise 2.

- a) What are the symmetry operations of a regular hexagon?
- b) What is the order of the point group of it?
- c) What is the order of all elements of the group?
- d) Find the classes. Why are not all the two-fold axes in the same class?

Exercise 3*.

Consider the point group T_d (full symmetry of the tetrahedron).

- a) Find all elements of the group and determine the order of the group.
- b) Determine the order of the elements of T_d .
- c) Find the classes of T_d .