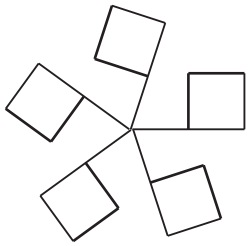
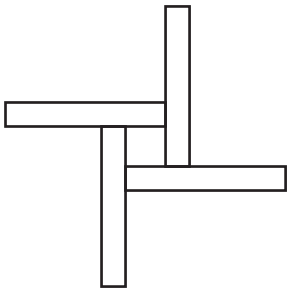
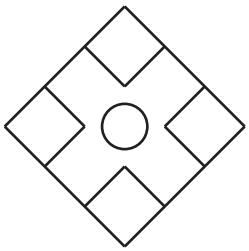
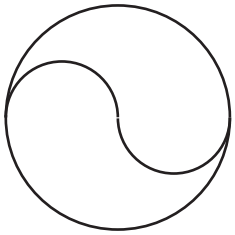
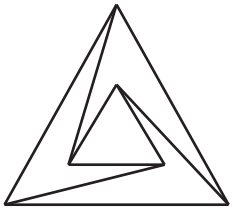
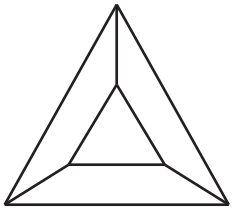
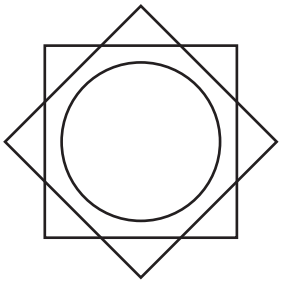
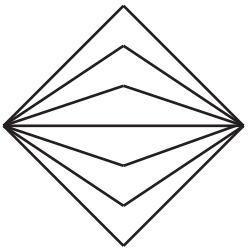
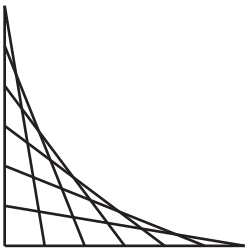
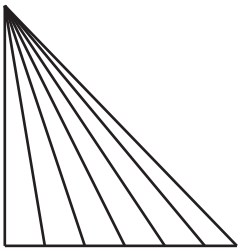
1. Create a group table for the symmetries of the figure below What is its symmetry group called?



2. Create a group table for the symmetries of the equilateral triangle. It will be helpful to cut out such a triangle and label its vertices A,B,C on both sides. What is its symmetry group called?

3. What are the symmetry groups of each of the following figures? What is the total number of symmetries in each case? Describe the symmetries which generate each symmetry group?

4. Count the symmetries of each of the figures below. Now modify each of the figures so as to reduce the symmetry to a smaller symmetry group (this may not always be possible). Try to avoid breaking all the symmetry. Name the new symmetry group you have created and write down how many symmetries it has. The new symmetry group is called a **subgroup** of the original symmetry group. Only certain subgroups are possible. By examining the examples you and the members of your group have created find a rule that will tell you what how many symmetries a subgroup of a group with n symmetries can have.