

# **Symmetry, Tessellations, and Escher's prints**

Math Day

Presenter: Julia Pevtsova

March 22, 2010

# 17 wallpaper patterns (=crystallographic groups)

How to recognize a wallpaper pattern? Which one of the 17 is it? Look for clues:

1. There are always 2 directions of **translational symmetry**.

2. Identify **rotational symmetry**:

- (a)  $60^\circ$  (6-fold)
- (b)  $90^\circ$  (4-fold)
- (c)  $120^\circ$  (3-fold)
- (d)  $180^\circ$  (2-fold)
- (e) none

3. Identify **reflection** axes (0, 1 or 2) and the angle between them if there are 2.