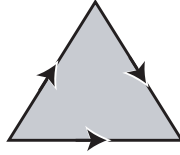# Math 8062 Homework 1

Due Wednesday, 1/31/11

1. Consider a cell complex X, with one 0–cell, one 1–cell, and one triangular 2–cell. The three sides of the triangle are identified to the same edge, with the following orientations:

Prove that X is contractible. *Hint:* It really helps to visualize this object. In fact, it can be made out of paper or cloth, and embedded in $\mathbb{R}^3$. To actually prove contractibility, consider using the homotopy equivalence criterion on page 13 of Hatcher.

2. Do problems 1, 3, 5 on page 38 of Hatcher.