

## MATH 180, MINITEST 2

Choose two.

- (1) Verify that the action of  $\mathbb{Z}$  on  $\mathbb{R}$  by  $a.x = 2^a \cdot x$  is indeed a group action.
- (2) Explain stereographic projection with a diagram. True or False: this shows that the sphere  $S^2$  is homeomorphic to the plane  $\mathbb{R}^2$ .
- (3) Find a glide reflection  $g$  of  $\mathbb{R}^2$  such that a fundamental domain for  $\langle g \rangle$  is a vertical strip of width two. What is the quotient surface?