

Homework

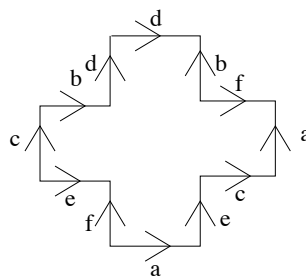
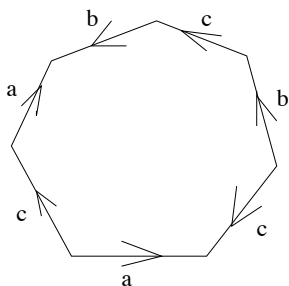
M472

Fall 2010

1. TRUE OR FALSE:

- (a) Let S be a closed compact surface. If the Euler characteristic of S is even, then S is orientable.
- (b) Let S be a closed compact surface. If S is orientable, then the Euler characteristic of S is even.

2. Decide whether the pictures below represent a surface or not. In case of a positive answer, recognize the surface.



3. Prove that if S_1 and S_2 are connected compact surfaces, then

$$\chi(S_1 \# S_2) = \chi(S_1) + \chi(S_2) - 2$$