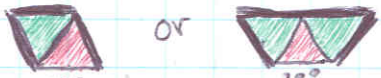
6.885
L 11.2
Oct. 18, 2004

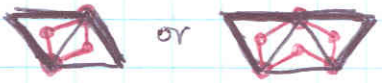
Construction of facet path: (for 2-manifolds)

① Cut all edges except for a spanning tree of dual
- removes some connections ⇒ harder to unfold
- duplicates some vertices but can repeat
- result: triangulated polygon (no interior vertices)

② Color the "ears" = △s adjacent to just one △
= leaves in dual tree

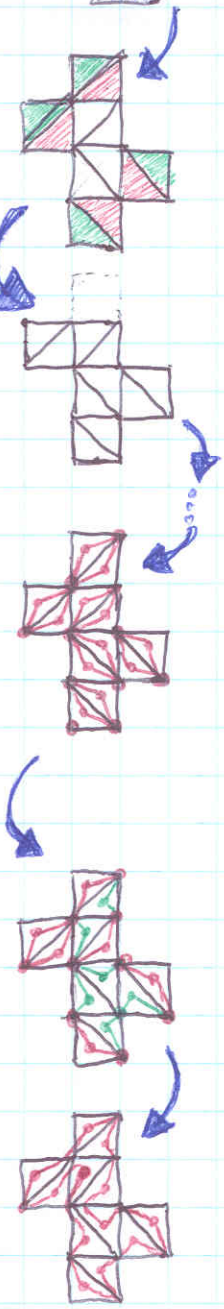
③ Color the ears in what remains

④ Remove second ear & adjacent first ear(s)
- either  or
dunce cap Mickey Mouse ears
- recurse on remainder
- put back with:



- base case: nothing or

⇒ subgraph of vertex-facet incidence graph
with 0 or 2 odd-degree vertices
& visiting all facets

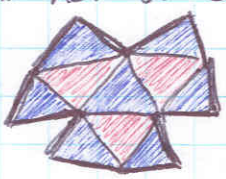


⑤ Connect this subgraph by local patching:

→ same degrees

⑥ Follow Eulerian cycle or path in subgraph
- noncrossing for "proper" vertex unfolding
(planar)

Cycle exists ⇔ not a "checkered" polygon triangulation



↳ all triangles of one color
have three adjacent △s
i.e. all boundary triangles a single color