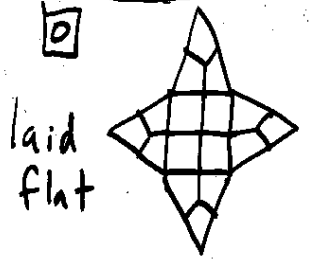
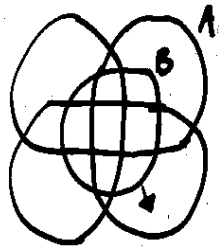
Schneiders's Open Problem

0



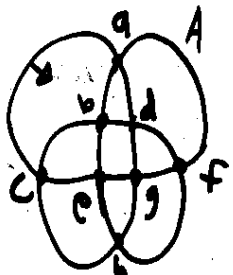
1 duality



2 curves, A & B

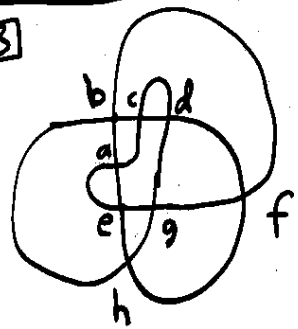
contract B out (or in)
4 hexes formed either way

2



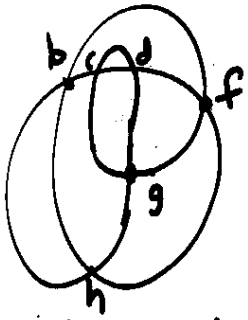
cross chords abc
forms a dual hex

3



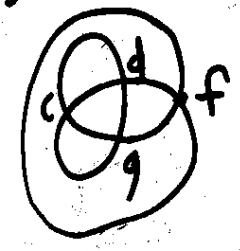
join chords a e

4



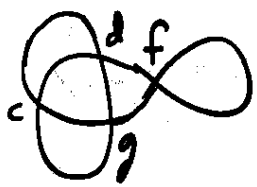
join chords bh

5



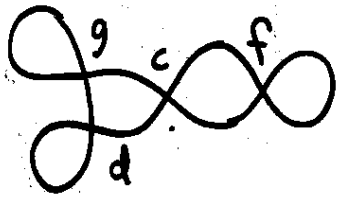
Here's where being on
the sphere matters
Move the outer subloop f
around infinity
NO topological changes

6



cross chords cgd
forms a dual hex

7



join chords cf

8

join gd

9 ○ simple curve-done ☺

Note: there are many
variations, e.g. of order of ops

e.g. 6 cross dgf
7 join dg
8 join cf

These variations may result in
better or worse pillowing in 10

Note: the two hexes are
formed at a point of
triple self-intersection,
as in a "boy surface"
not a pinch point

10 Pillow like crazy to remove
degeneracies. The 6 hexes
become about 120. ☹

11 Dualize to get proper hexes
and smooth. May have
inverted elements anyway

"Hex meshed in 9 standard
dual steps, plus
pillowing from Hell"

-Scott Mitchell, samitch@sandia.gov