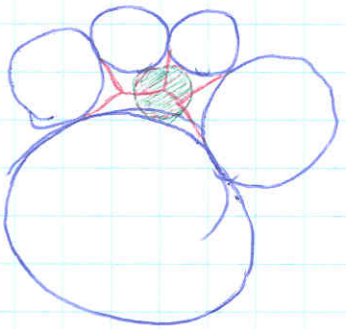
Method 2: "disk packing" [BDEH1998]

1. "thicken" the desired cut edges slightly (ε)
2. find disk packing (nonoverlapping disks) such that:
   - (A) every vertex of thickened cuts & paper boundary is a disk center
   - (B) every edge of ... is a union of radii
   - (C) every "gap" between disks has 3 or 4 sides
3. dual ⇒ decomposition into triangles & quadrangles
4. fold each △/□ into a "molecule" aligning boundary
5. glue molecules together ⇒ align all edges

Disk packing: [Eppstein 1997, for example]

- place disks centered at vertices (not too large)
- place disks along edges (not too large)
- place disks at deepest Voronoi vertex to decompose large gaps



Molecules:

"rabbit ear"

from Lang's tree theory

Joining molecules:

- first join along spanning tree ⇒ nested "starfish"
  - ↳ each star nests "into" parent in the rooted tree
- joining remaining edges
- no crossing if homeomorphic to disk

- can bound # creases in terms of $\int$ local feature size & n

OPEN: strongly polynomial bound (in terms of just n) possible?

OPEN: what patterns are possible with just simple folds? [Martin Demaine]

- must have "line of symmetry"...