

Programmable Matter by Folding

multiple shapes, compound folds

To view video: http://erikdemaine.org/papers/Matter_PNAS/.

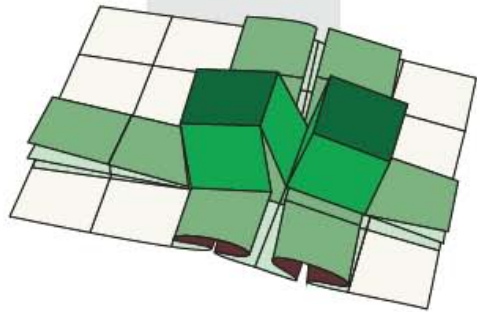
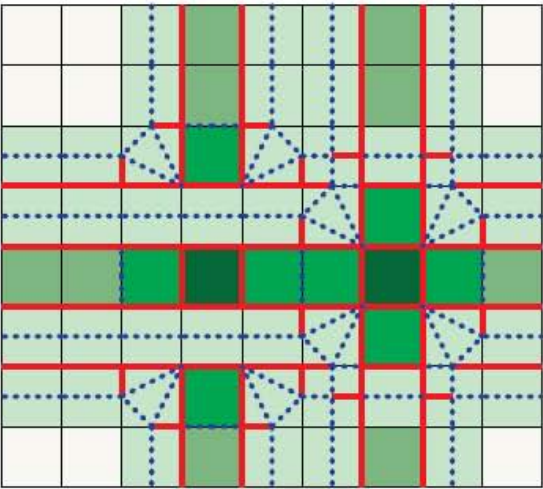
Mountain-valley pattern and folded state of box-pleat gadget removed due to copyright restrictions.

[Benbernou, Demaine,
Demaine, Ovadya 2010]

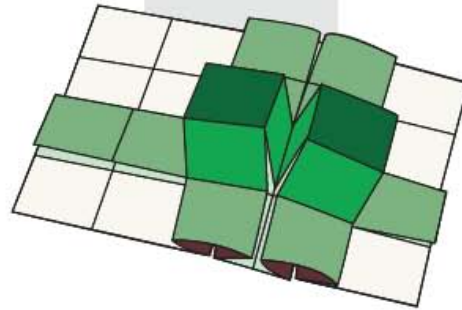
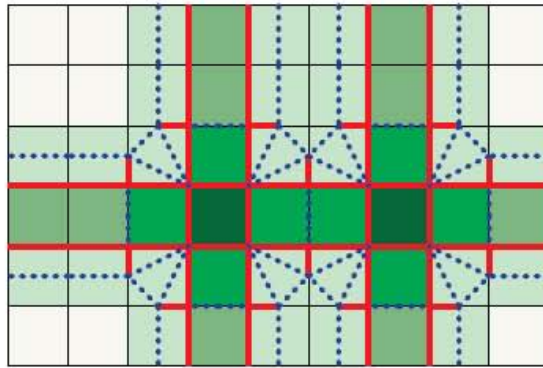
Diagrams of how paper moves when new cube is folded removed due to copyright restrictions.

Mountain-valley crease pattern and photograph of folded model removed due to copyright restrictions.

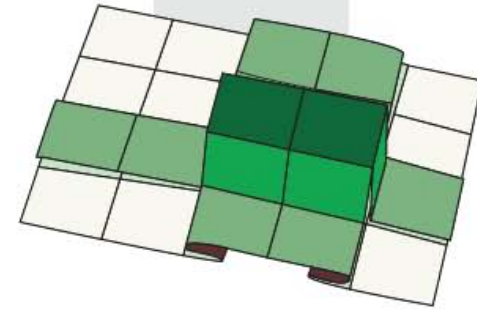
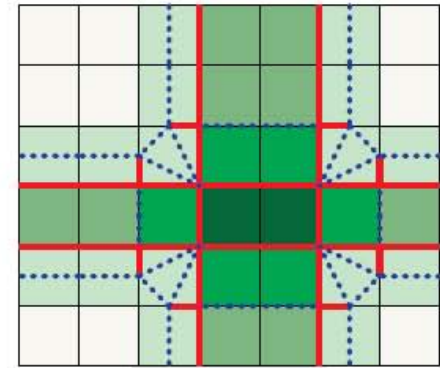
[Benbernou, Demaine, Demaine, Ovarya 2010]



CEA 4.1
Naive Surface
Extrusions

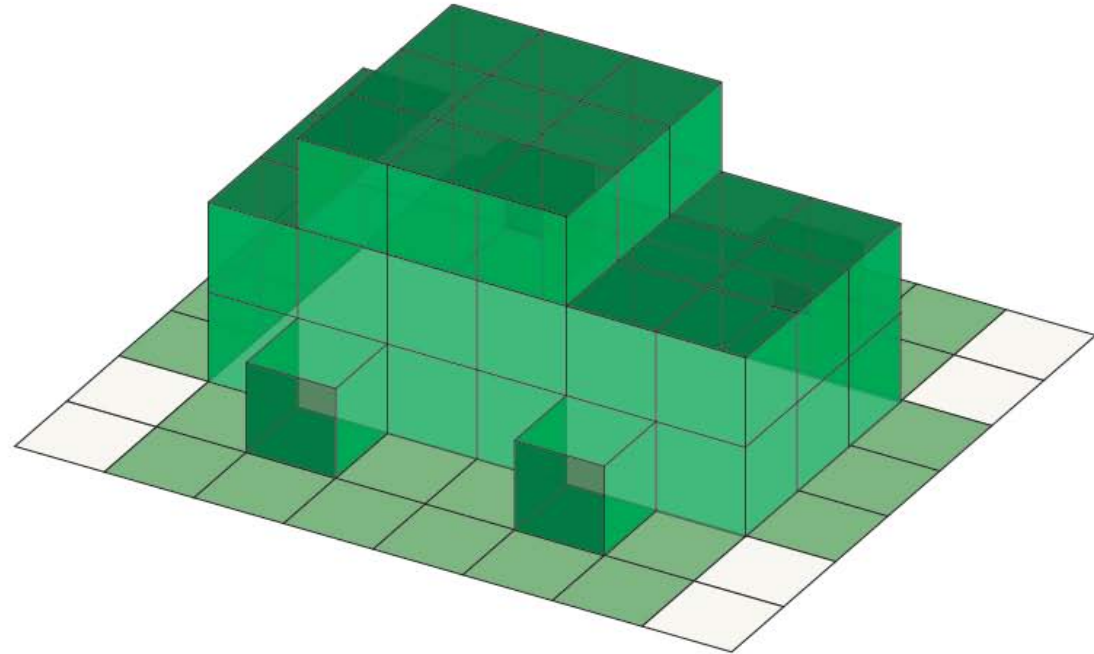
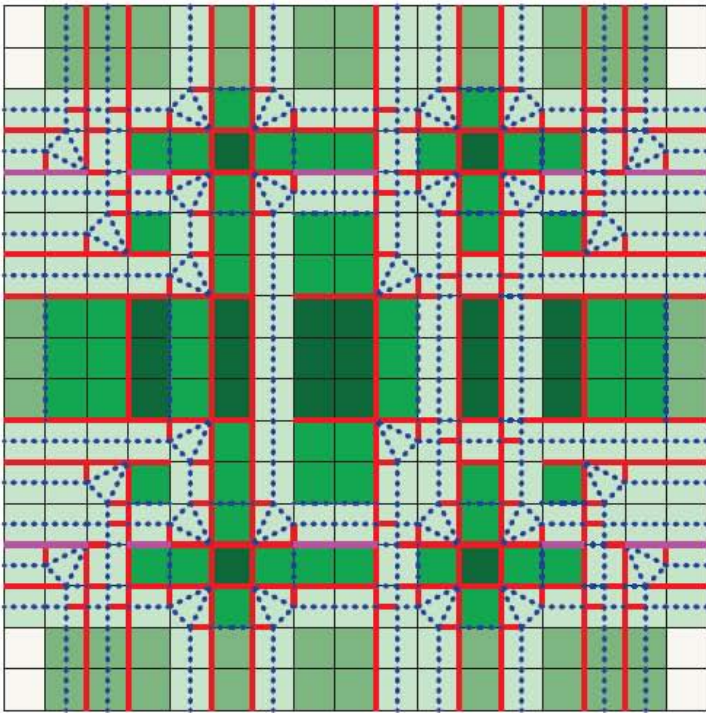


CEA 4.2
Pleat Sharing
Surface Extrusions

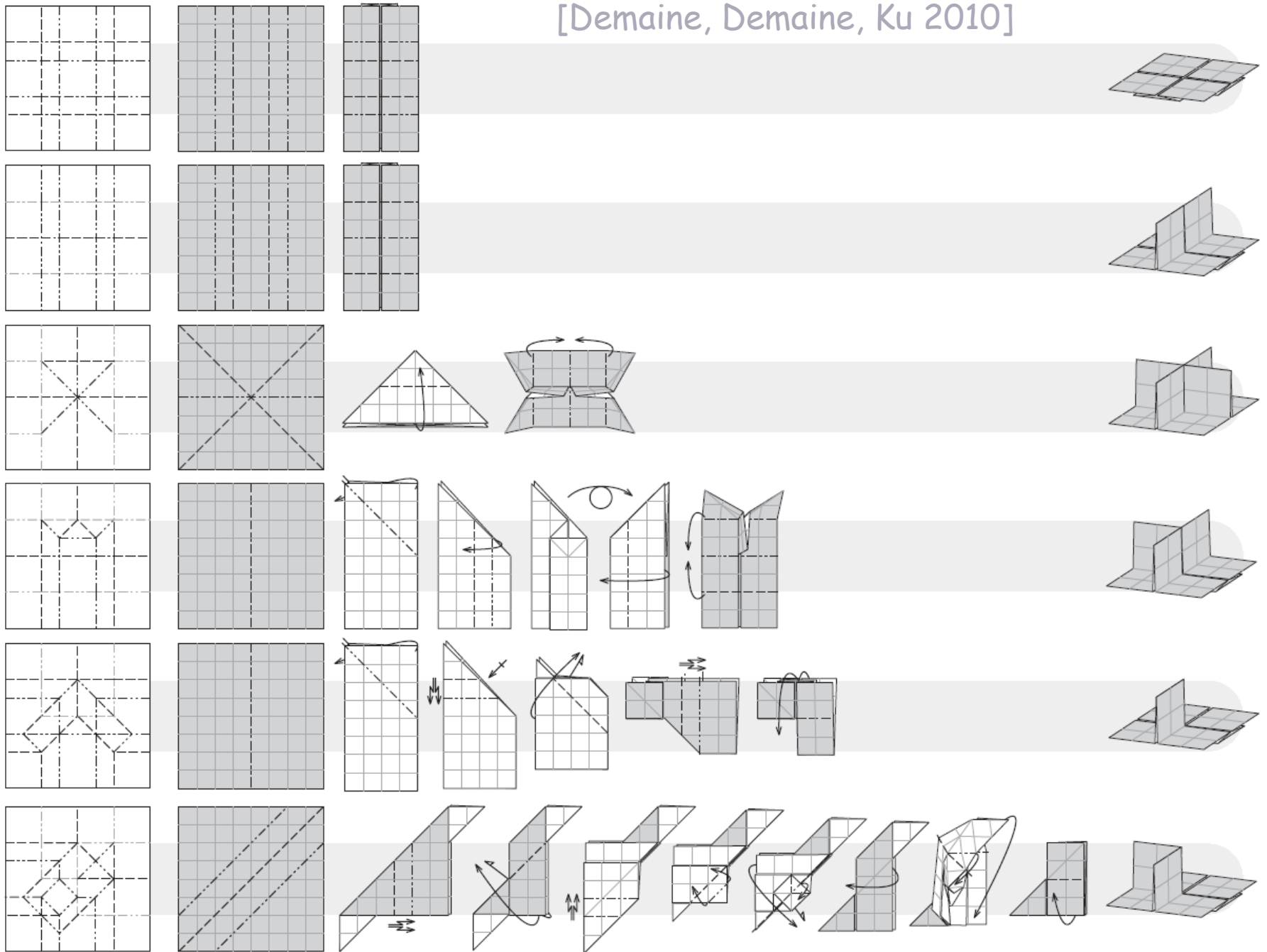


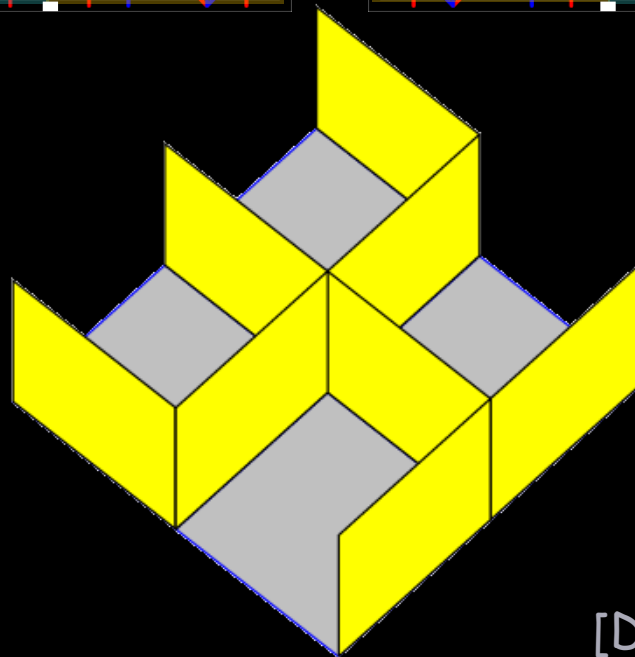
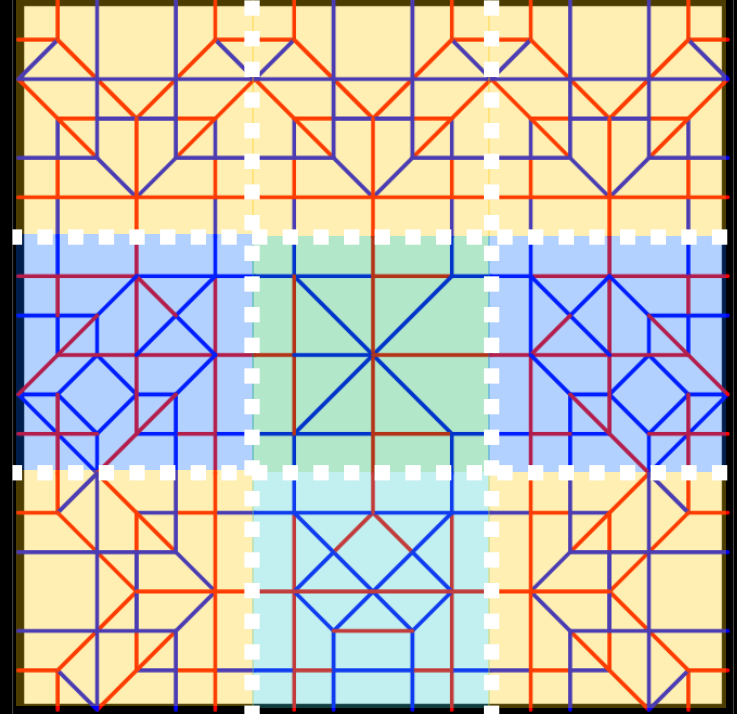
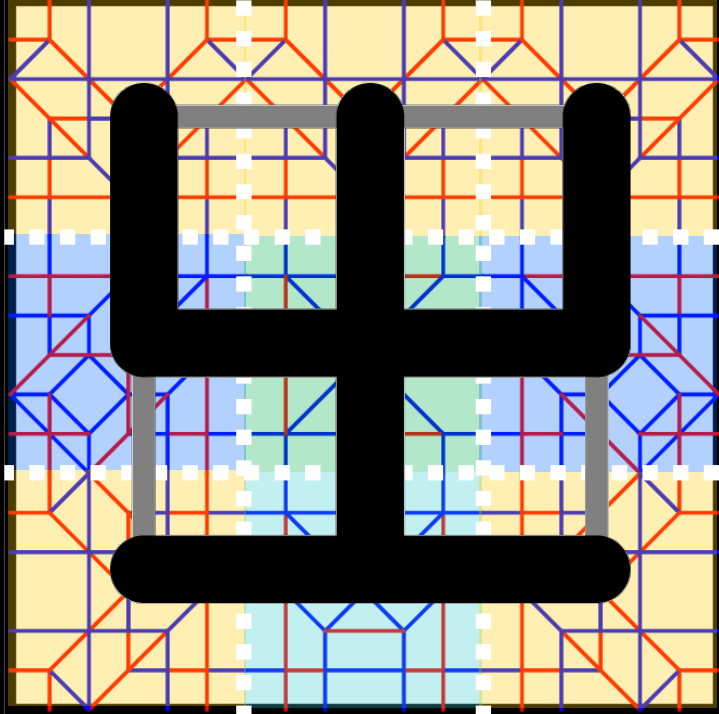
CEA 4.3
Side Sharing
Surface Extrusions

Courtesy of Aviv Ovadya. Used with permission.

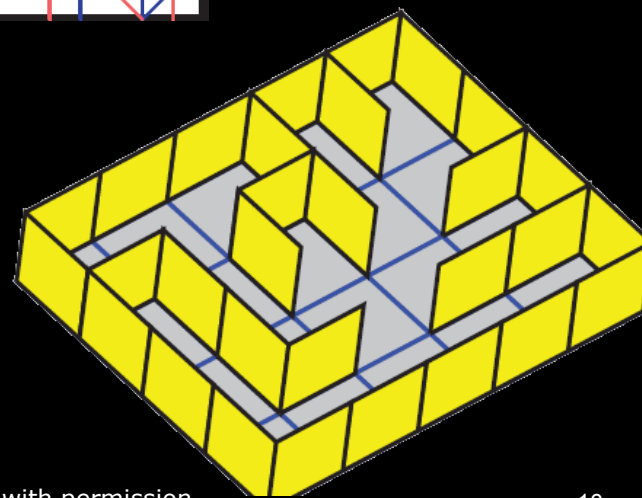
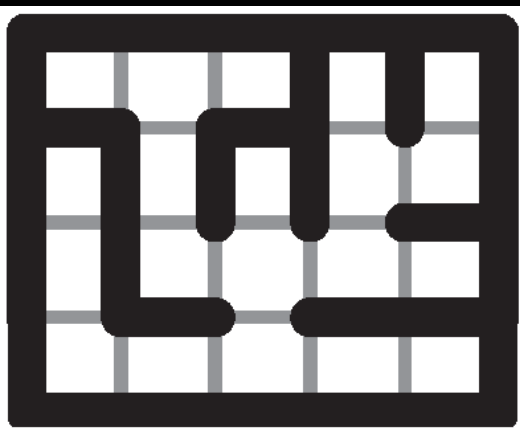
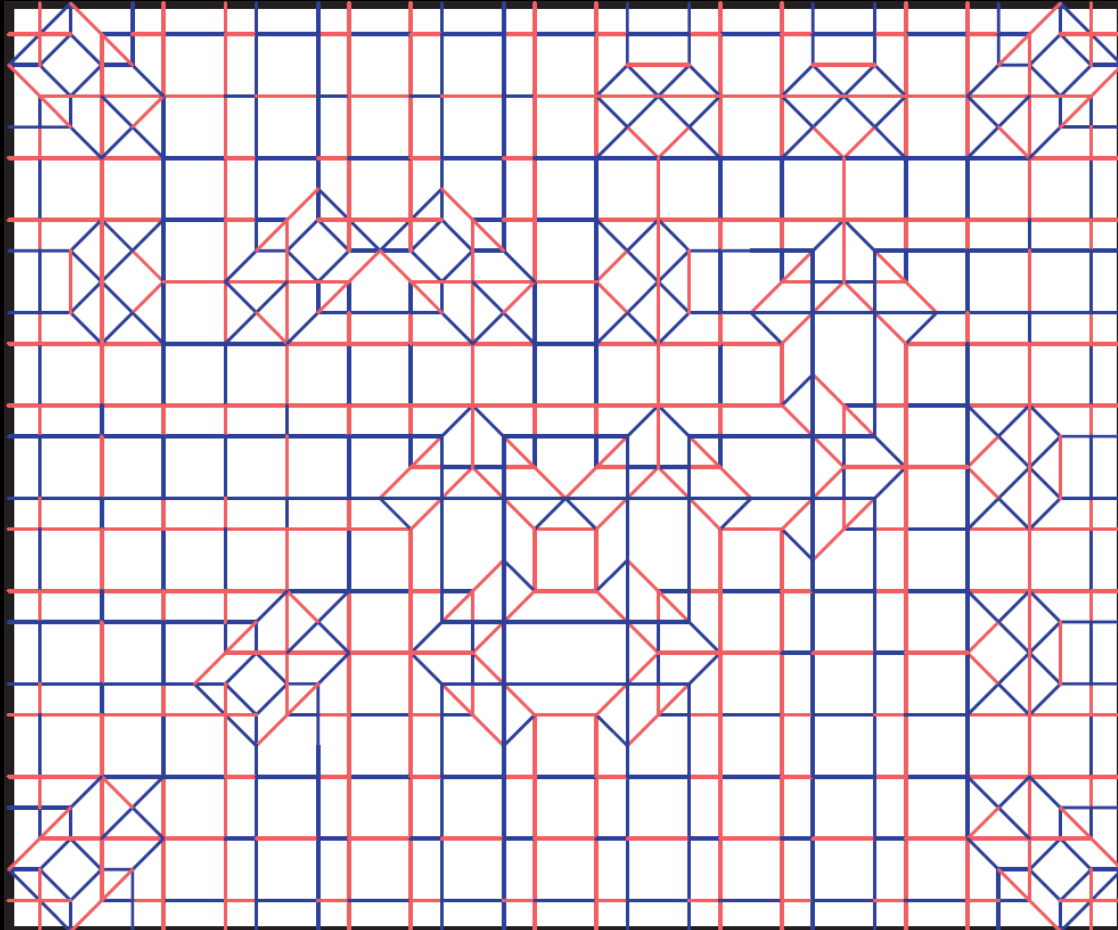


Courtesy of Aviv Ovadya. Used with permission.



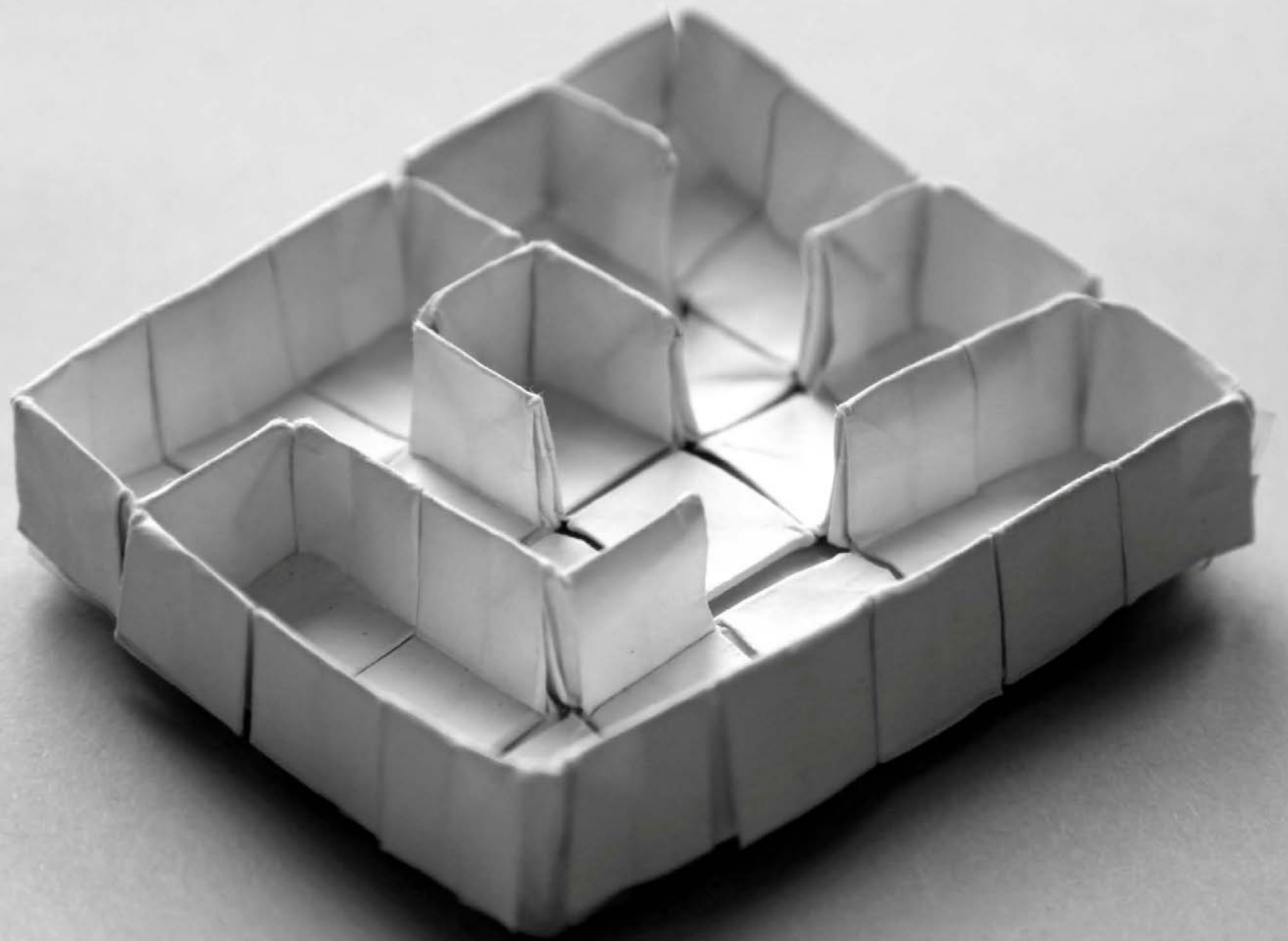


[Demaine, Demaine, Ku 2010]



[Demaine, Demaine, Ku 2010]

Courtesy of Erik D. Demaine, Martin L. Demaine, and Jason Ku. Used with permission.



folding by Christopher Chin

Courtesy of Erik D. Demaine, Martin L. Demaine, and Jason Ku. Used with permission.

Maze Folder

<http://erikdemaine.org/fonts/>

[Erik Demaine](#), [Martin Demaine](#), [Jason Ku](#)

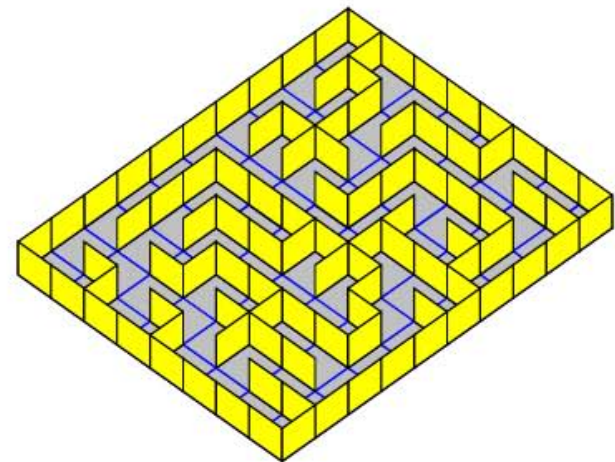
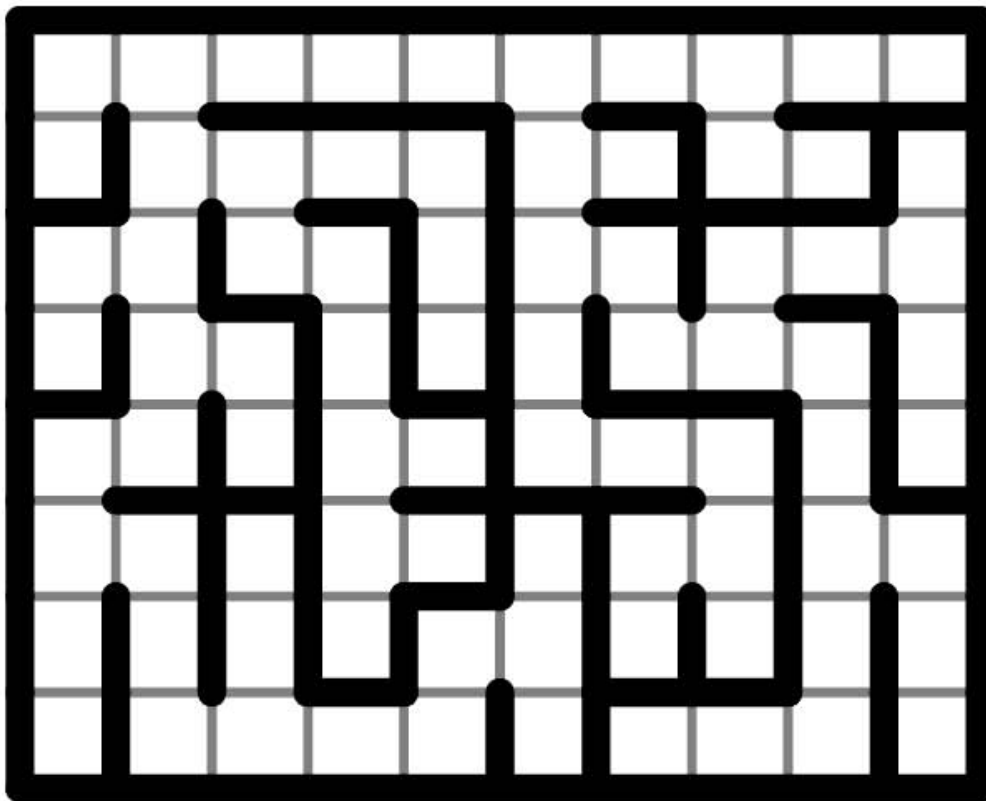
10 × 8 input grid

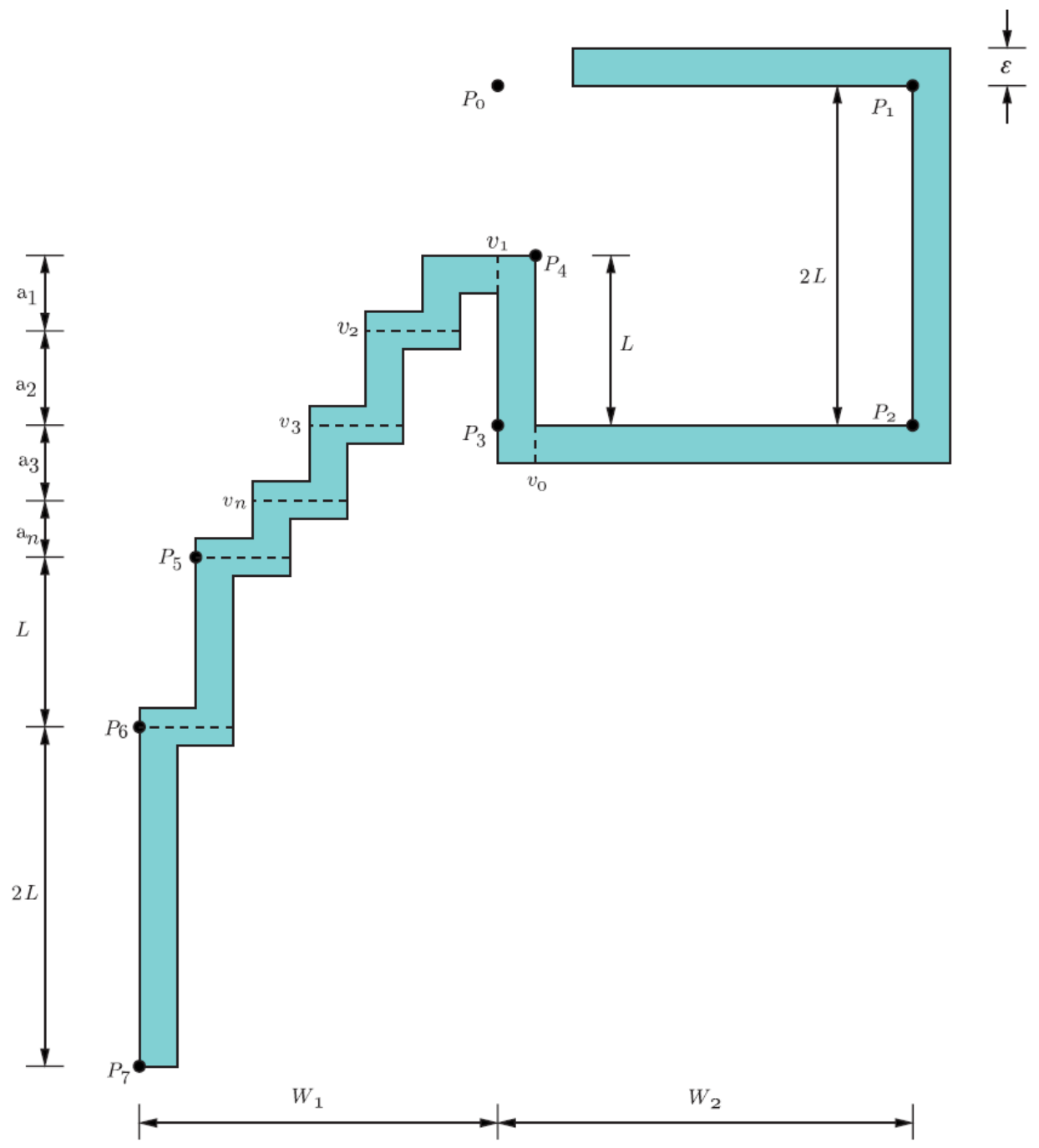
Lock degree-0 corners

Clear maze

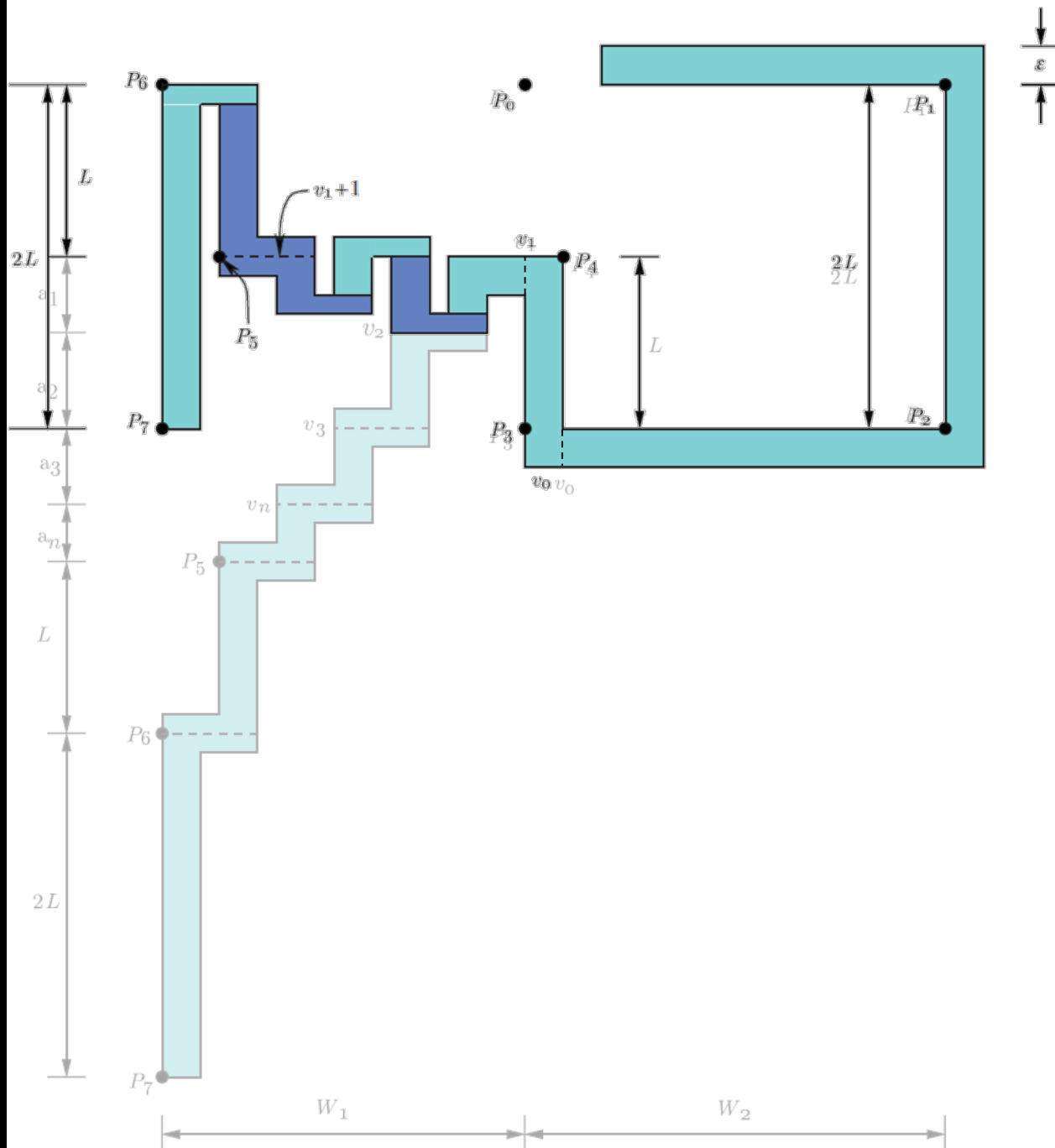
Random maze

text



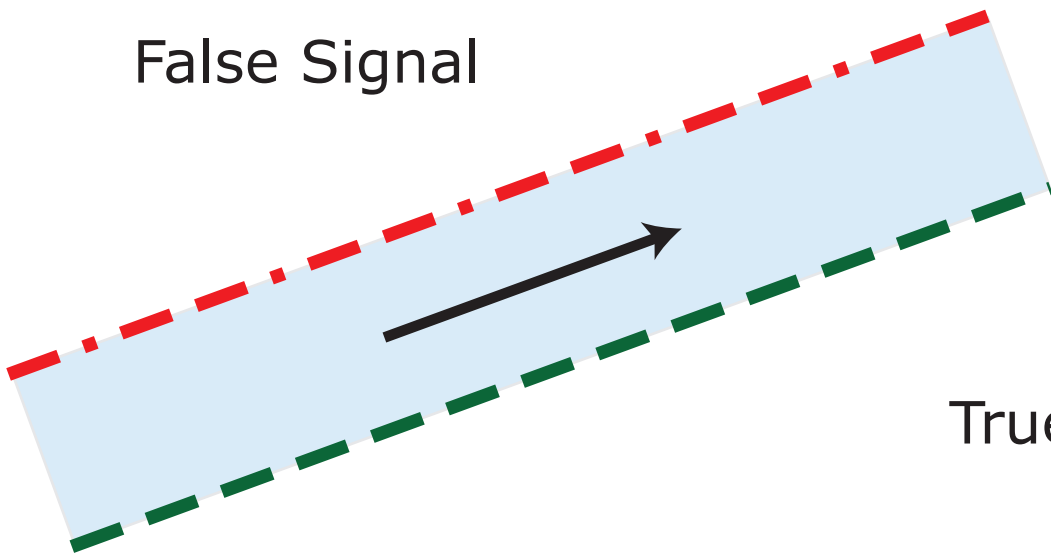


[Arkin,
Bender,
Demaine,
Demaine,
Mitchell,
Sethia,
Skiena
2000]



[Arkin,
Bender,
Demaine,
Demaine,
Mitchell,
Sethia,
Skiena
2000]

False Signal



True Signal

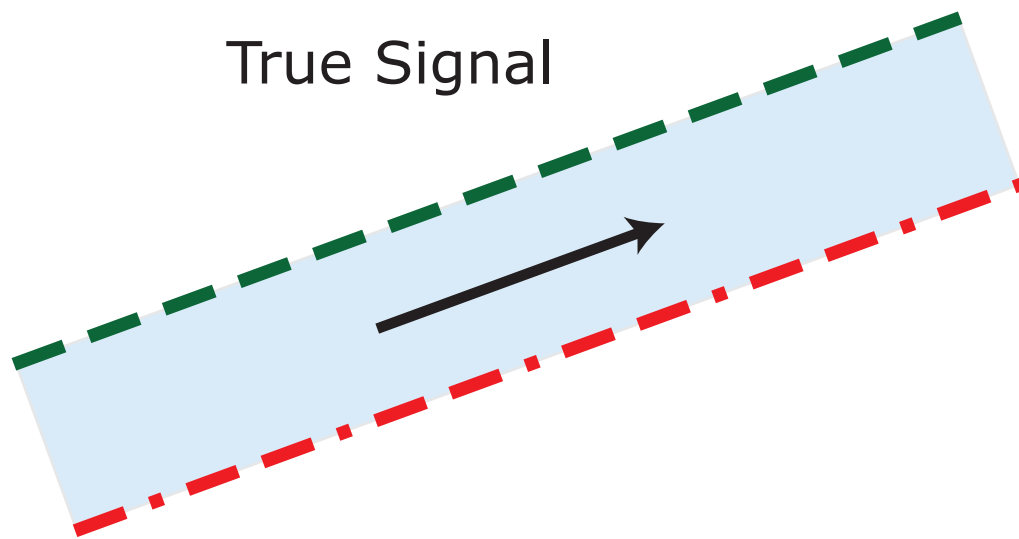


Image by MIT OpenCourseWare.

[Bern & Hayes 1996]

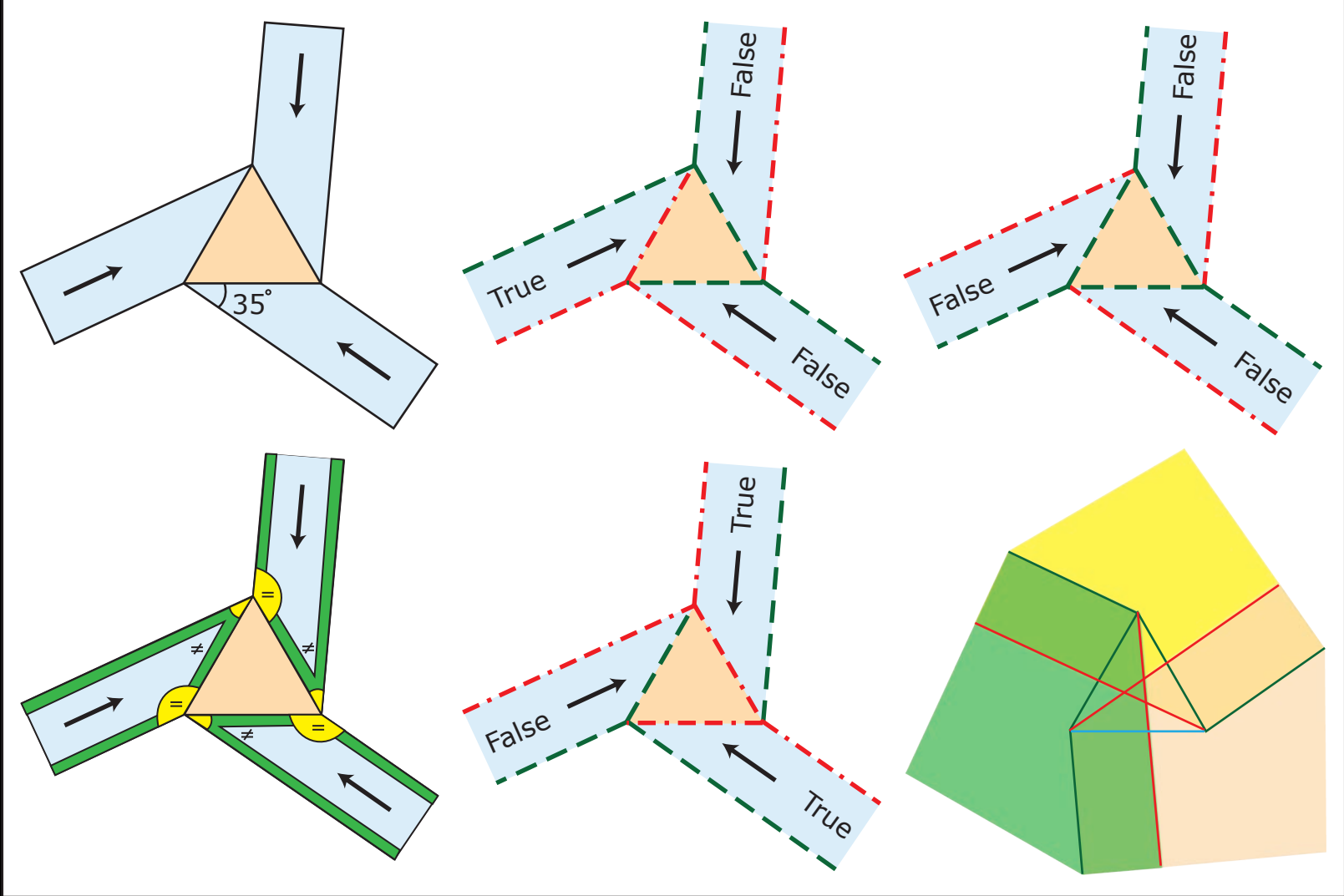


Image by MIT OpenCourseWare.

[Bern & Hayes 1996]

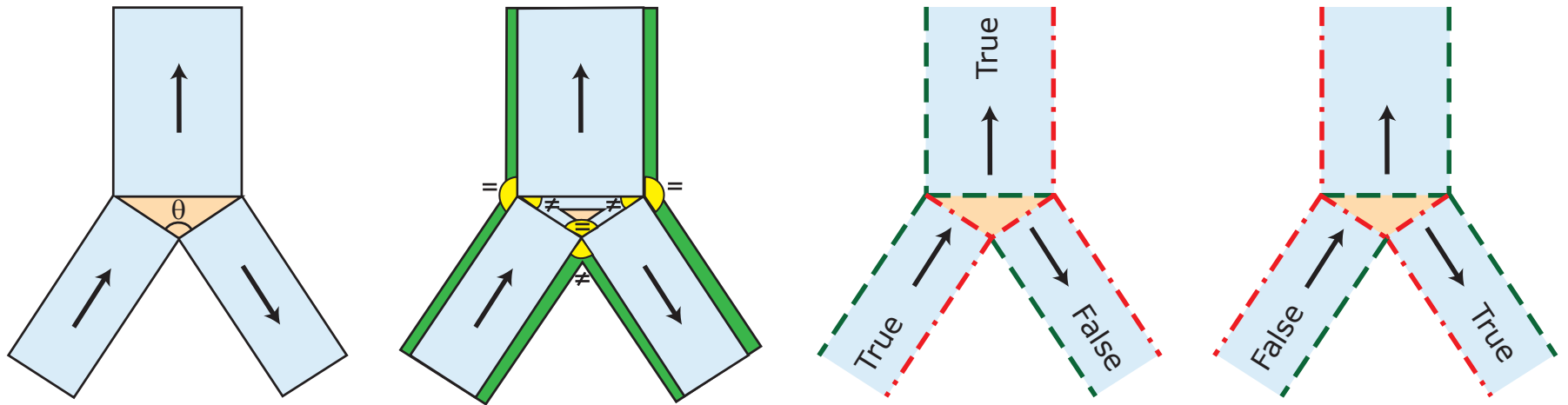


Image by MIT OpenCourseWare.

[Bern & Hayes 1996]

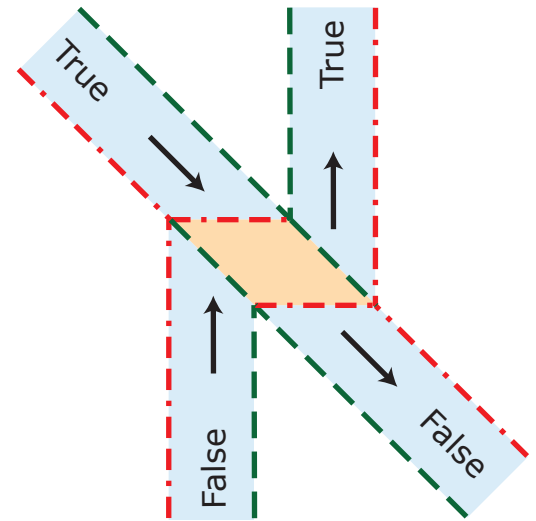
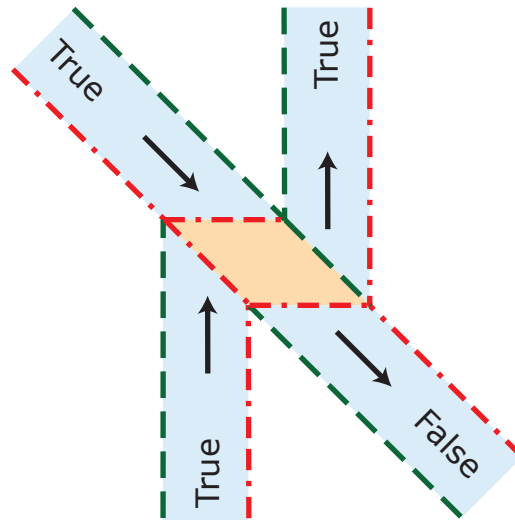
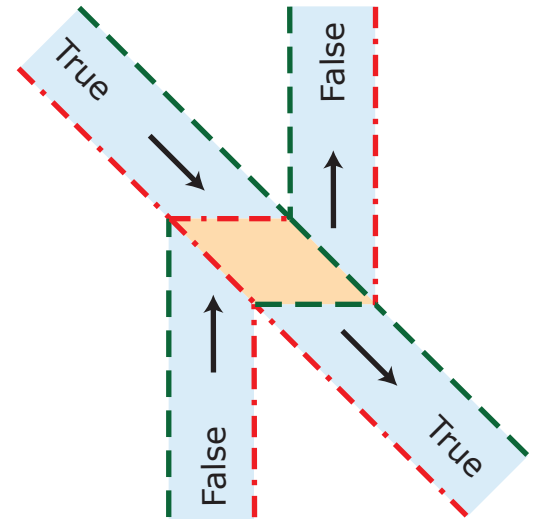
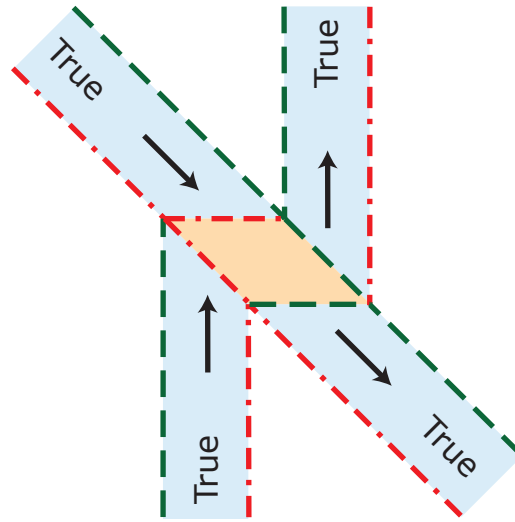
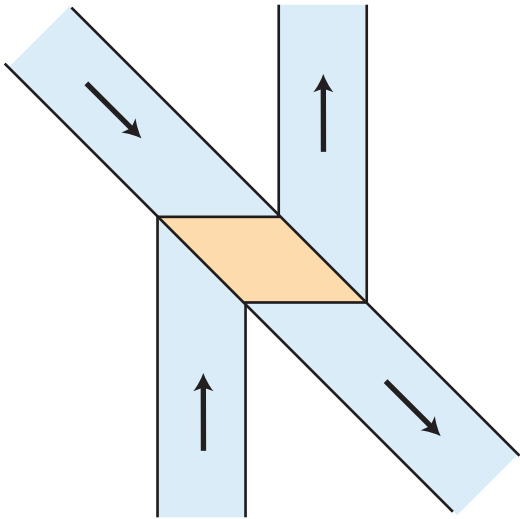


Image by MIT OpenCourseWare.

[Bern & Hayes 1996]

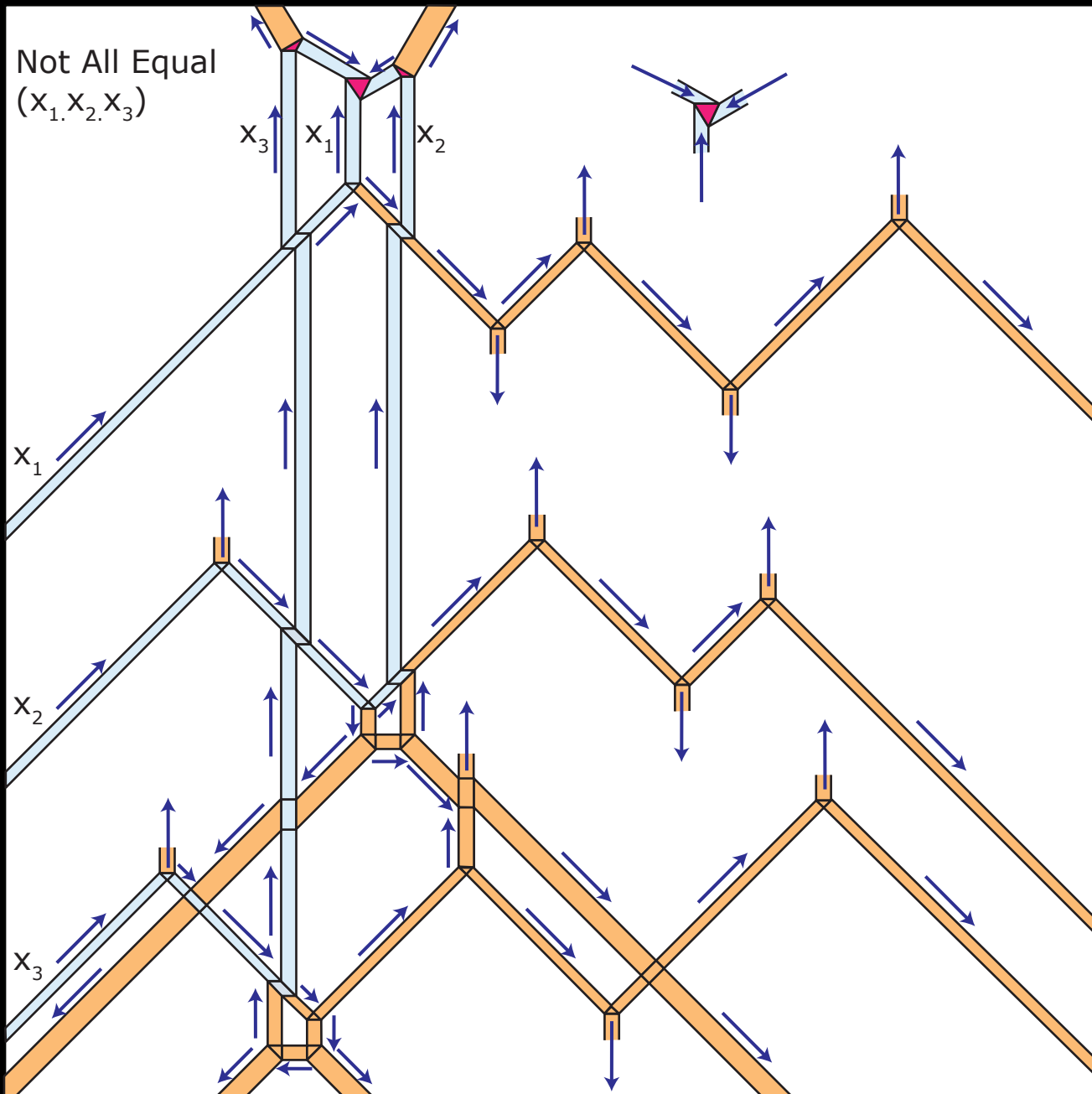
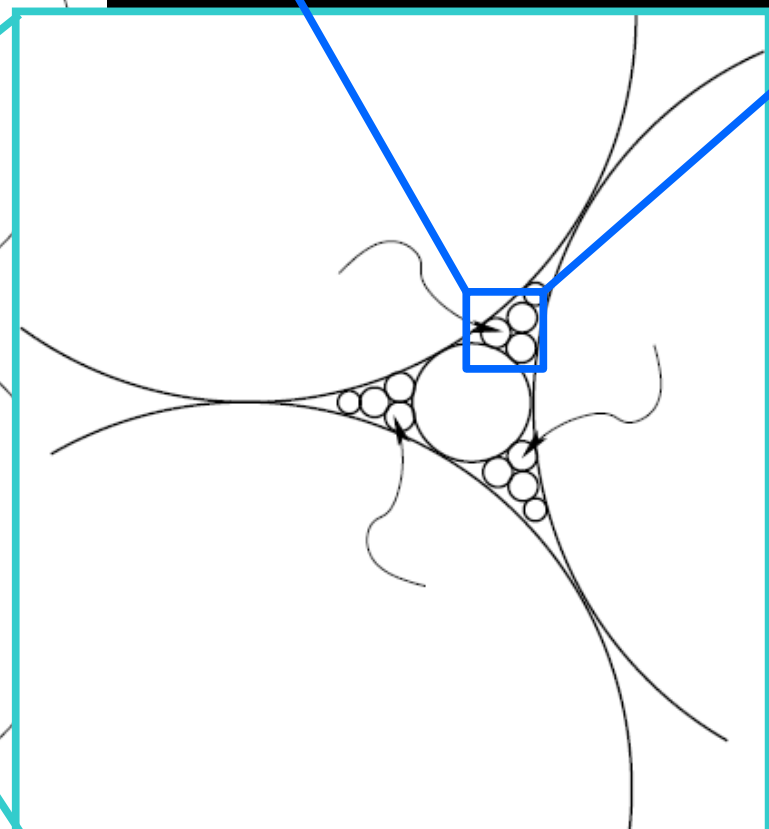
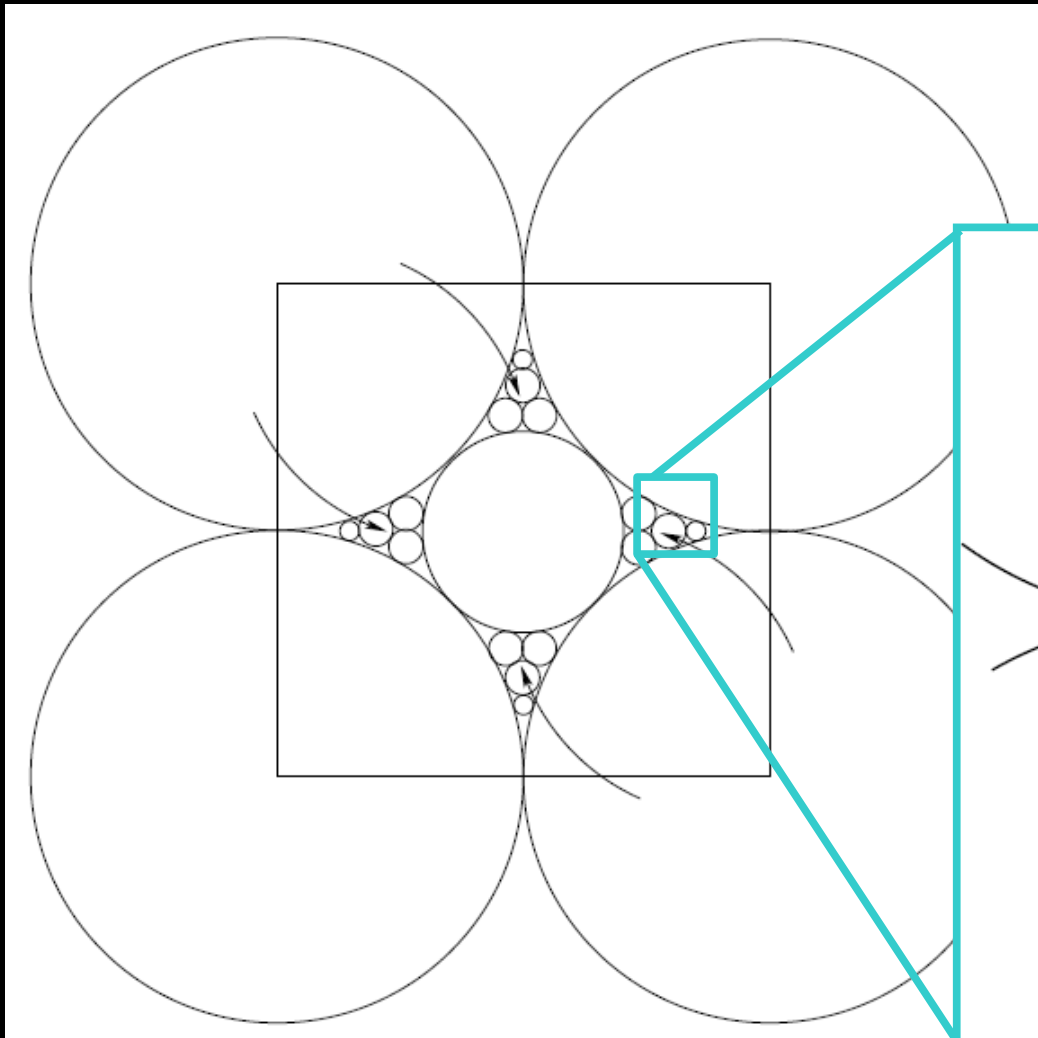
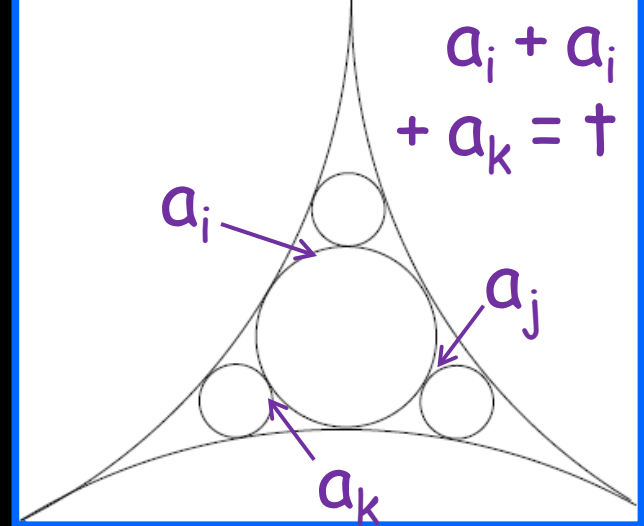


Image by MIT OpenCourseWare.

[Bern &
 Hayes
 1996]

[Demaine, Fekete, Lang 2010]



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6.849 Geometric Folding Algorithms: Linkages, Origami, Polyhedra
Fall 2012

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