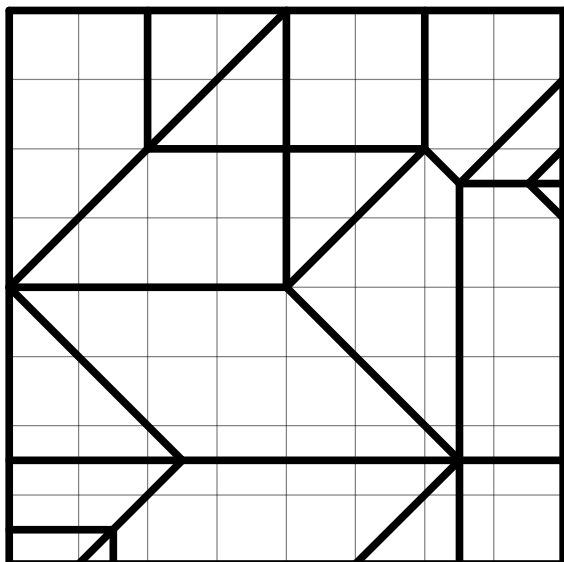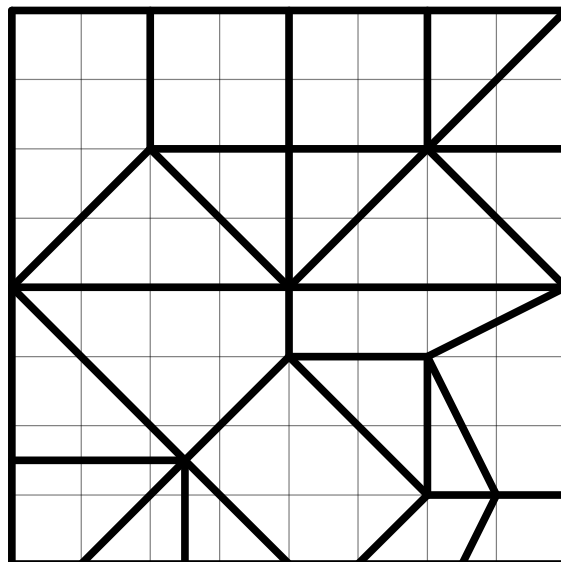## Problem Set 2

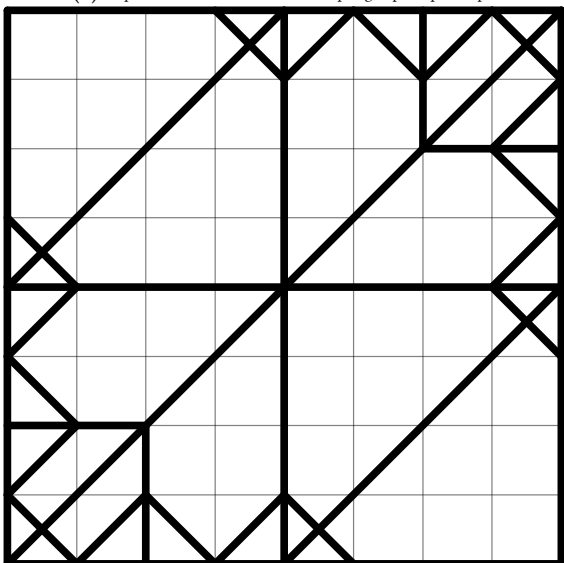*Due: Thursday, February 20, 2025 at 10am*

Problem 2.1 [Flat Folding]. Which of the four crease patterns in Figure 1 are flat foldable? Justify each answer by either submitting a photograph of a flat folding or arguing why the crease pattern cannot fold flat. Are any simply foldable (foldable by a sequence of simple folds)?
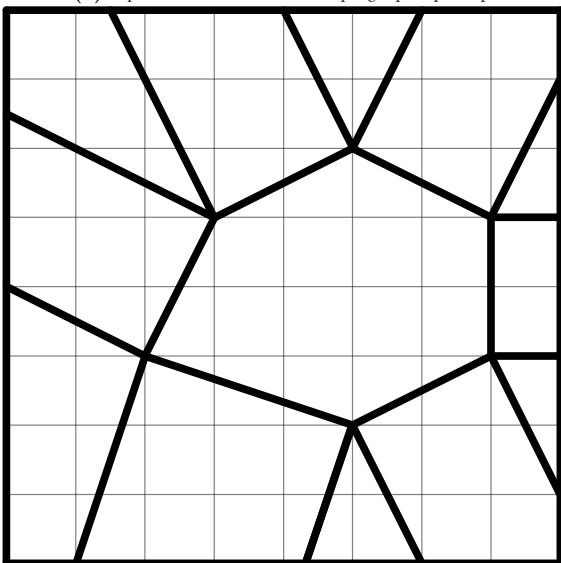

(a) http://courses.csail.mit.edu/6.5310/spring25/psets/ps2-1a.pdf

(b) http://courses.csail.mit.edu/6.5310/spring25/psets/ps2-1b.pdf

(c) http://courses.csail.mit.edu/6.5310/spring25/psets/ps2-1c.pdf

(d) http://courses.csail.mit.edu/6.5310/spring25/psets/ps2-1d.pdf

Figure 1: Crease patterns for Problem 2.1. All vertices lie on a 16×16 grid.

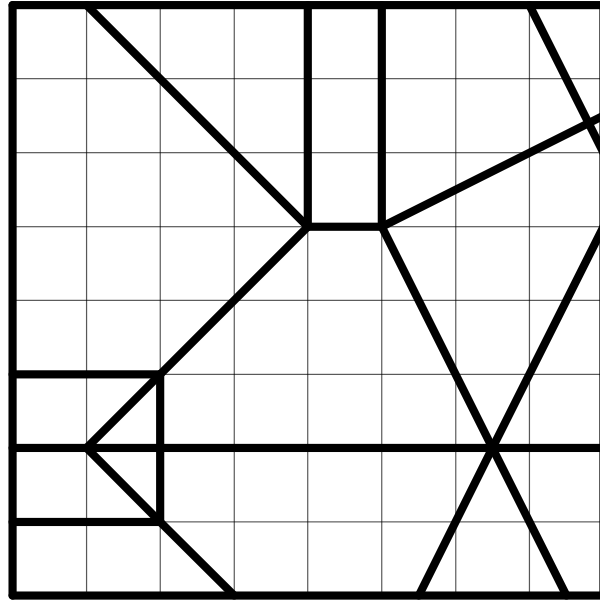**Optional:** Is the crease pattern in Figure 2 flat foldable?

Figure 2: Optional crease pattern for Problem 2.1. http://courses.csail.mit.edu/6.5310/spring25/psets/ps2-1e.pdf

Problem 2.2 [1D Folding Counterexamples].

(a) Draw a 1D mountain-valley pattern that is mingling (as defined in Lecture 1) but not flat foldable.

(b) Draw a folded state (including stacking order) of a 1D mountain-valley pattern that cannot be achieved by crimps and end folds.