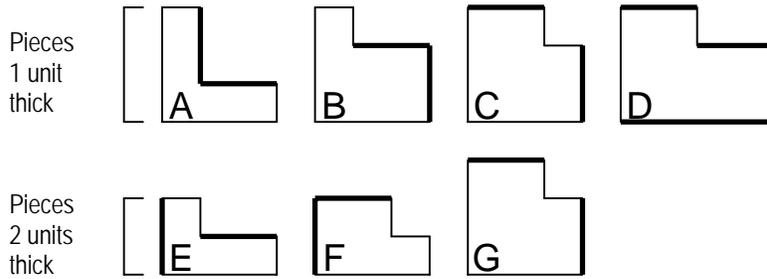
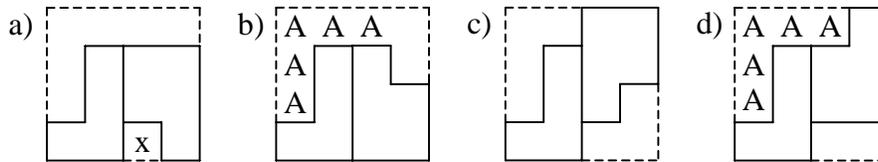


The Pieces Light lines are 1 or 3 units long
 Heavy lines are 2 or 4 units long



Seven L-ements Solution Logic (and “proof” of a single solution):

- 1) The puzzle is based on a 4x4x4 cube.
- 2) The cube has 8 corner cells. There are only 7 pieces, and only one of these, piece D, is long enough to fill two corner cells. Therefore, each piece must “claim” one corner cell, except piece D claims two.
- 3) The cube has 8 center (internal) cells. If each piece must fill some corner cell, only the three fat pieces (E, F, G) can fill the 8 center cells. Furthermore, each of these pieces must contribute the most cells it can to the center cells.
- 4) Filling the center cells can only be done in a small number of ways: E and F occupy a 2x2x1 block – we can put them flat on the table so they fill the lower 2x2x1 center cells. Piece G can lay flat on top and fill the upper 2x2x2 block. For E and F we have only the following possibilities (ignoring mirror images):



Arrangement a) will not work because there is no way to fill the cell marked with an ‘x’ on the bottom layer with a piece that must also occupy a corner.
 Arrangement c) will not work because on the bottom layer there are edge cells on four sides to be filled and only two corner cells. Since there are no pieces which can contribute to more than one edge of these bottom layer edge cells, and each piece must also occupy a nearby corner, of which there are only two, this arrangement will not work.
 In arrangements b) and d) there are edge cells on three sides of the bottom layer and only two corner cells. Only piece A can make up the difference by lying flat as shown.
 In arrangement b) only pieces B or D can fill the remaining bottom layer edge cell. By trying each in turn and then placing piece G on top of E and F to fill the top four center cells and some corner cell (four possibilities), we see than nothing is workable for completing the cube.

In arrangement d), as with arrangement b), only pieces B or D can fill the remaining bottom layer edge cell. By trying each in turn and then placing piece G on top of E and F to fill the top four center cells and some corner cell (four possibilities), we quickly arrive at the only solution.