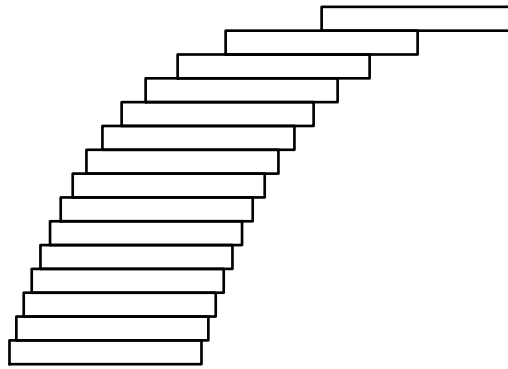


Homework 8

Due Wednesday, October 29, 2008

- (a) Using blocks that are each 1 inch wide, I build the following structure:



The rightmost block is $1/2$ inch to the right of the block under it; the second block from the top is $1/4$ inch to the right of the block underneath it, the third block from the top is $1/6$ inch to the right of the block under it. In general, the n^{th} block from the top is $1/(2n)$ inches to the right of the $(n+1)^{\text{th}}$ block.

Part (i) Prove that this structure will not fall over, no matter how many blocks are used.

Part (ii) By using as many blocks as I like, how far to the right of the bottom block can I make the top block?

- (b) On page 592, in section 12.3, do problems: 1, 6, 8, 10, 18, 24, 31, 35.