

0) $n=3$

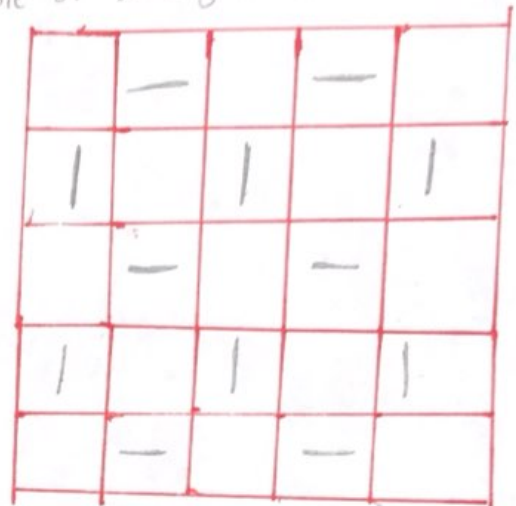
1) 3×3 grid

ex:



$\leftarrow 2n+1$ rows
 $2n+1$ columns

example of 2×2 grid



2) randomly choose $\frac{2n+1}{2}$ boundary edges to delete.

Boundary rows: $0 \times i$ for $i=1, 3, 5, \dots, 2n-1$
(with array indexing starting at 0) $2n \times i$ " "

Boundary columns: $i \times 0$ for $i=1, 3, 5, \dots, 2n-1$
 $i \times 2n$ for $i=1, 3, 5, \dots, 2n-1$

to randomly pick one of these to remove

(i) randomly pick odd # between 1 and $2n-1$. Call it i

(ii) randomly pick # between 1 and 4. Call it case.

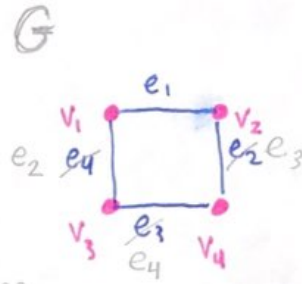
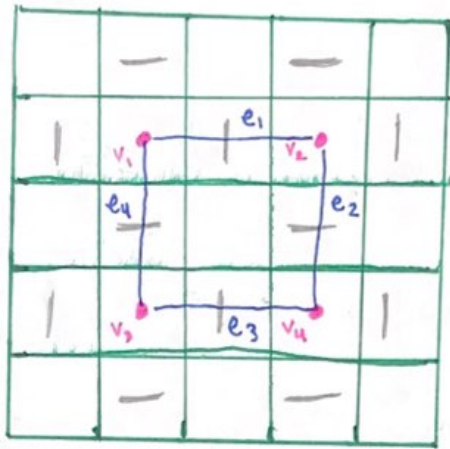
If case=1, remove $0 \times i$

If case=2, remove $2n \times i$

" case=3, " $i \times 0$

" case=4, " $i \times 2n$

3) create graph G where ...



← each edge represents a wall that is not on the boundary

To create graph G

vertices of $G = V(G) = \{v_1, v_2, \dots, v_{n^2}\}$

edges of $G = E(G) = \{v_1 v_2, v_2 v_3, \dots, v_{n-1} v_n\} \cup \{v_{(n+1)} v_{(n+2)}, v_{(n+2)} v_{(n+3)}, \dots, v_{(2n-1)} v_{(2n)}\}$
 $\cup \{v_{(2n+1)} v_{(2n+2)}, \dots, v_{(3n-1)} v_{(3n)}\} \cup \dots \cup \{v_{((n-1)n+1)} v_{((n-1)n+2)}, \dots, v_{n^2-1} v_{n^2}\}$