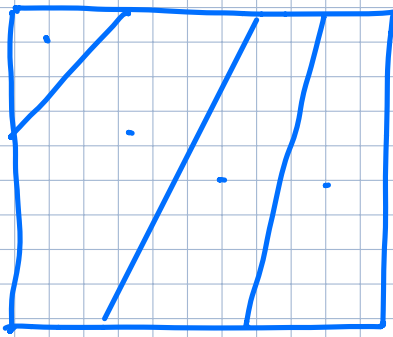






fewest # regions

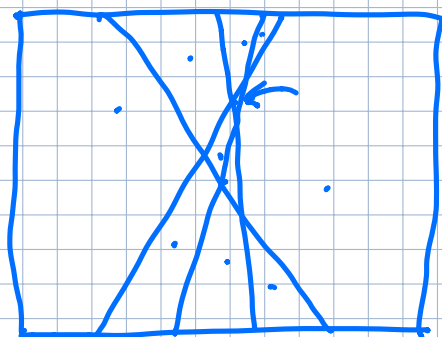
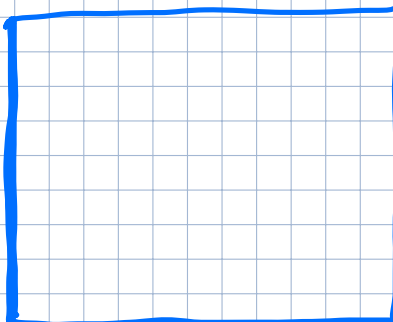
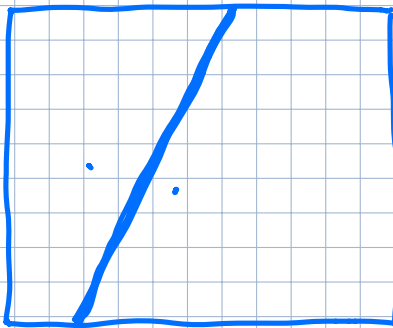
Lines	Regions
0	1
1	2
2	3
3	4

100

101

$$\# \text{ regions} = \# \text{ lines} + 1$$

$$r = l + 1$$



Largest # regions

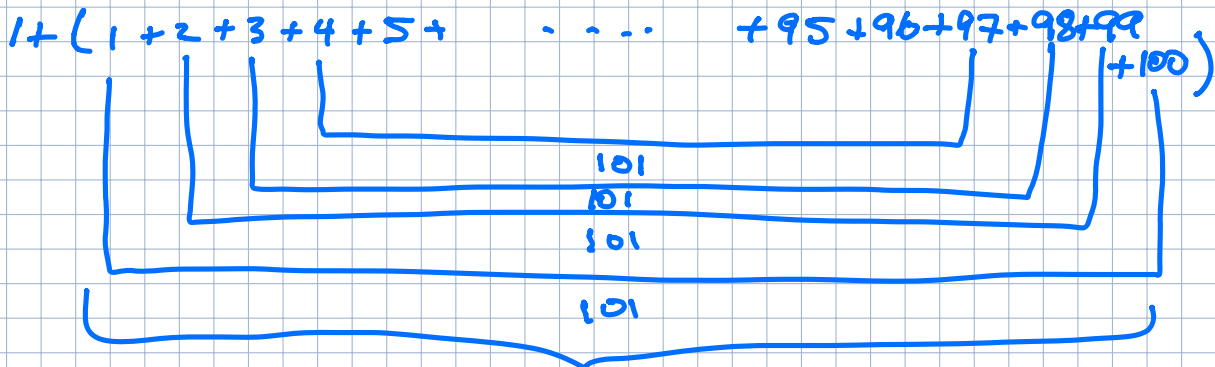
Lines	Regions
0	1
1	2
2	4
3	7
4	11

0	1
1	2
2	4
3	7
4	11
5	16
6	22
...	...
100	?

$$16 \stackrel{?}{=} \frac{0+1+2+3+4+5}{15}$$

$$22 \frac{8}{2} = \frac{0+1+2+3+4+5+6}{2} = 21$$

of regions = (sum of 1...n) + 1
 ↑ # of lines.



1 + $\frac{100}{2} = 50 \times 101 = 5,050$

1 +

$$5,050 = 5,051$$

Regions using 100 ht. lines.

1 + 2 + ... + (n-1) + n

$$\frac{n}{2} (n+1) = \text{sum of } 1 \dots n$$