

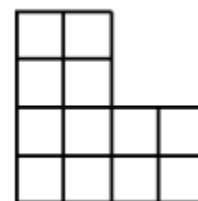
## IMC Spatial Reasoning

1. All the positive integers are written in the cells of a square grid. Starting from 1, the numbers spiral anticlockwise. The first part of the spiral is shown in the diagram.

				...	32	31	
		17	16	15	14	13	30
		18	5	4	3	12	29
		19	6	1	2	11	28
		20	7	8	9	10	27
		21	22	23	24	25	26

What number will be immediately below 2012?

- A 1837                  B 2011                  C 2013                  D 2195  
E 2210
2. The diagram shows an L-shape divided into  $1 \times 1$  squares. Gwyn cuts the shape along some of the lines shown to make two pieces, neither of which is a square. She then uses the pieces to form a  $2 \times 6$  rectangle.



What is the different between the areas of the two pieces?

- A 0                  B 1                  C 2                  D 3                  E 4
3. [IMC 2004 Q16] If the pattern shown is continued, what number will appear directly below 400?

			1			
		2	3	4		
	5	6	7	8	9	
10	11	12	13	14	15	16

- A 438      B 439      C 440      D 441      E 442

**Answers:**

1. D
2. C
3. C