

Given,
Input

0	1	1	0	1
0	1	1	0	1
0	1	1	0	1
0	1	1	0	1
0	1	1	0	1

5x5

Filter 1

1	0	1
1	1	1
0	0	1

3x3

Filter 2

0	0	1
1	0	0
0	1	1

3x3

Padding = 1

Stride = 1

Max Pool = (2x2)

Add padding,

0	0	0	0	0	0	0
0	0	1	1	0	1	0
0	0	1	1	0	1	0
0	0	1	1	0	1	0
0	0	1	1	0	1	0
0	0	1	1	0	1	0
0	0	0	0	0	0	0

7x7

After filter 1

2	3	2	3	1
3	4	3	5	1
3	4	3	5	1
3	4	3	5	1
2	3	3	4	1

$$\frac{7-3}{1} + 1 = 4 + 1 = 5 \times 5$$

After filter 2

1	2	2	2	1
2	3	2	3	1
2	3	2	3	1
2	3	2	3	1
2	1	1	2	0

5x5

Combining both filters,

3	5	4	5	2
5	7	5	8	2
5	7	5	8	2
5	7	5	8	2
3	4	4	6	1

5x5

2x2 MaxPool

7	7	8	8
7	7	8	8
7	7	8	8
7	7	8	8

$$\frac{5-2}{1} + 1 = 3 + 1 = 4 \quad 4 \times 4$$

(Ans)