

## Question 2

After 2 zero padding,  $9 \times 9$  matrix:

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 3 | 4 | 2 | 1 | 0 | 0 |
| 0 | 0 | 2 | 5 | 6 | 3 | 4 | 0 | 0 |
| 0 | 0 | 4 | 5 | 6 | 3 | 2 | 0 | 0 |
| 0 | 0 | 5 | 5 | 2 | 5 | 3 | 0 | 0 |
| 0 | 0 | 6 | 5 | 3 | 2 | 1 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Applying filter 1 with stride 1,  $7 \times 7$  matrix:

|   |    |    |    |    |   |   |
|---|----|----|----|----|---|---|
| 0 | 0  | 0  | 0  | 0  | 0 | 0 |
| 1 | 4  | 8  | 9  | 7  | 3 | 1 |
| 2 | 7  | 13 | 14 | 13 | 7 | 4 |
| 4 | 9  | 15 | 14 | 11 | 5 | 2 |
| 5 | 10 | 12 | 12 | 10 | 8 | 3 |
| 6 | 11 | 14 | 10 | 6  | 3 | 1 |
| 0 | 0  | 0  | 0  | 0  | 0 | 0 |

Applying filter 2 with stride 1,  $7 \times 7$  matrix!

|   |   |    |    |    |    |   |
|---|---|----|----|----|----|---|
| 0 | 0 | 1  | 3  | 4  | 2  | 1 |
| 0 | 0 | 3  | 8  | 10 | 5  | 5 |
| 0 | 0 | 7  | 13 | 16 | 8  | 7 |
| 0 | 0 | 11 | 15 | 14 | 11 | 9 |
| 0 | 0 | 15 | 15 | 11 | 10 | 6 |
| 0 | 0 | 11 | 10 | 5  | 7  | 4 |
| 0 | 0 | 6  | 5  | 3  | 2  | 1 |