Original Image

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----|----|----|----|----|----|----|
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| 36 | 37 | 38 | 39 | 40 | 41 | 42 |
| 43 | 44 | 45 | 46 | 47 | 48 | 49 |
| · | | | | | | |

Zero padded image

| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|---|----|----|----|----|----|----|----|---|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 0 |
| 0 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 0 |
| 0 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 0 |
| 0 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 0 |
| 0 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 0 |
| 0 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 0 |
| 0 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Filter/Kernel

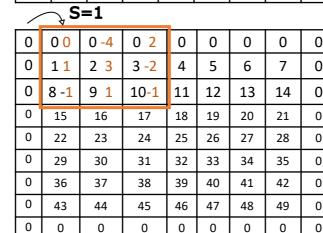
| -1 | 1 | -1 | | | | |
|----|----|----|--|--|--|--|
| -2 | 3 | 1 | | | | |
| 2 | -4 | 0 | | | | |
| | | | | | | |



Flipped Kernel

| 0 | -4 | 2 |
|----|----|----|
| 1 | 3 | -2 |
| -1 | 1 | -1 |

| 0 0 | 0 -4 | 02 | 0 | 0 | 0 | 0 | 0 | 0 |
|------|------|-----|----|----|----|----|----|---|
| 0 1 | 13 | 2-2 | 3 | 4 | 5 | 6 | 7 | 0 |
| 0 -1 | 81 | 9-1 | 10 | 11 | 12 | 13 | 14 | 0 |
| U | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 0 |
| 0 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 0 |
| 0 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 0 |
| 0 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 0 |
| 0 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



$$I[0,0] = 1 \times 3 + 2 \times (-2) + 8 \times 1 + 9 \times (-1) = 2$$

$$I[0,1] = 1 \times 1 + 2 \times 3 + 3 \times (-2) + 8 \times (-1) + 9 \times 1 + 10 \times (-1) = -8$$

$$I[0,6] = 6 \times 1 + 7 \times 3 + 13 \times (-1) + 14 \times 1 = 28$$