$X \sim 6 \times 6 \times 1$

$f \sim 3 \times 3 \times 1$

How many Parameters are there in the Kernel?

$(3 \times 3 \times 1) + 1 = 10$

Shape of width of the filter * shape of height of the filter *

$((m \times n \times d) + 1) * K$

d: number of filters in the previous layer.

K: number of filters.

2 :

$$\begin{bmatrix} 16 & 9 & -4 & -18 \\ 17 & -5 & -10 & -12 \\ 11 & -9 & -17 & 2 \\ 9 & -1 & -15 & 16 \end{bmatrix}$$

We perform the Convolution operation by sliding the filter over the input. At every location, we do element-wise matrix multiplication and sum the result.

3 :

$$\begin{bmatrix} \blacksquare & \blacksquare \\ \blacksquare & \blacksquare \end{bmatrix}$$

$$\begin{bmatrix} 17 & -4 \\ 11 & 16 \end{bmatrix}$$

instead of summation the result we choose the maximum one after element-wise matrix multiplication.

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