input | 2 | -1 | 3 | 0 | 2 | -1 | 2 | 1 | 2 |

filter weights | 2 | 1 | -2 |

bias | 2 |

first case : S=1, P=0

input array : | 2 | -1 | 3 | 0 | 2 | -1 | 2 | 1 | 2 |

filter weights: | 2 | 1 | -2 |

① 4 + -1 + -6 = -3

② -2 + 3 + 0 = 1

③ 6 + 0 + -4 = 2

④ 0 + 2 + 2 = 4

⑤ 4 + -1 + -4 = -1

⑥ -2 + 2 + -2 = -2

⑦ 4 + 1 + -4 = 1

after performing the convolution, considering the bias 2

-3+2, 1+2, 2+2, 4+2, -1+2, -2+2, 1+2

The output feature map:

-1, 3, 4, 6, 1, 0, 3

Second case : S=2, P=0

input array : | 2 | -1 | 3 | 0 | 2 | -1 | 2 | 1 | 2 |

filter weights: | 2 | 1 | -2 |

① 4 + -1 + -6 = -3

③ 6 + 0 + -4 = 2

⑤ 4 + -1 + -4 = -1

⑦ 4 + 1 + -4 = 1

Considering the bias 2

-3+2, 2+2, -1+2, 1+2

The output:

-1, 4, 1, 3

3rd case : S=4, P=0

input array : | 2 | -1 | 3 | 0 | 2 | -1 | 2 | 1 | 2 |

filter weights: | 2 | 1 | -2 |

① 4 + -1 + -6 = -3

⑤ 4 + -1 + -4 = -1

Considering the bias 2

-3+2, -1+2

output:

-1, 1

-1, 4, 1, 3

-1, 1

4th case : S=1, P=1

input array :

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

filter weights:

2	1	-2

① 0+2+2=4 ⑥ 4+-1+-4=-1

② 4+-1+-6=-3 ⑦ -2+2+-2=-2

③ -2+3+0=1 ⑧ 4+1+-4=1

④ 6+0+-4=2 ⑨ 2+2+0=4

⑤ 0+2+2=4

Considering the bias 2

4+2, -3+2, 1+2, 2+2, 4+2, -1+2, -2+2, 1+2, 4+2

the output :

6, -1, 3, 4, 6, 1, 0, 3, 6

5th case : S=4, P=1

input array :

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

filter weights:

2	1	-2

① 0+2+2=4

⑤ 0+2+2=4

Considering the bias 2

4+2, 4+2

Output =

6, 6

In the previous examples, for which values of S and P do we get an output of same dimension as the input ?

The case 4, S=1 P=1