Now we'd like you to calculate the number of parameters in the convolutional layer, if every neuron in the output layer shares its parameters with every other neuron in its same channel.

This is the number of parameters actually used in a convolution layer (`tf.nn.conv2d()`).

Setup

H = height, W = width, D = depth

- We have an input of shape 32x32x3 (HxWxD)
- 20 filters of shape 8x8x3 (HxWxD)
- A stride of 2 for both the height and width (S)
- Zero padding of size 1 (P)

Output Layer

- 14x14x20 (HxWxD)

Hint

With parameter sharing, each neuron in an output channel shares its weights with every other neuron in that channel. So the number of parameters is equal to the number of neurons in the filter, plus a bias neuron, all multiplied by the number of channels in the output layer.

Convolution Layer Parameters 2

How many parameters does the convolution layer have (with parameter sharing)?

3860

RESET