1	
point	

1.

What do you think applying this filter to a grayscale image will do?

$$\begin{bmatrix} 0 & 1 & -1 & 0 \\ 1 & 3 & -3 & -1 \\ 1 & 3 & -3 & -1 \\ 0 & 1 & -1 & 0 \end{bmatrix}$$

- Detect image contrast
- Detect horizontal edges
- Detect 45 degree edges
- Detect vertical edges

1 point

2.

Suppose your input is a 300 by 300 color (RGB) image, and you are not using a convolutional network. If the first hidden layer has 100 neurons, each one fully connected to the input, how many parameters does this hidden layer have (including the bias parameters)?

- 9,000,001
- 9,000,100
- 27,000,001
- 27,000,100

Quiz, 10	questions
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3.

Suppose your input is a 300 by 300 color (RGB) image, and you use a convolutional layer with 100 filters that are each 5x5. How many parameters does this hidden layer have (including the bias parameters)?

2501

2600

7500

7600

1 point

4.

You have an input volume that is 63x63x16, and convolve it with 32 filters that are each 7x7, using a stride of 2 and no padding. What is the output volume?

16x16x32

29x29x16

29x29x32

16x16x16

1 point

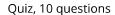
5.

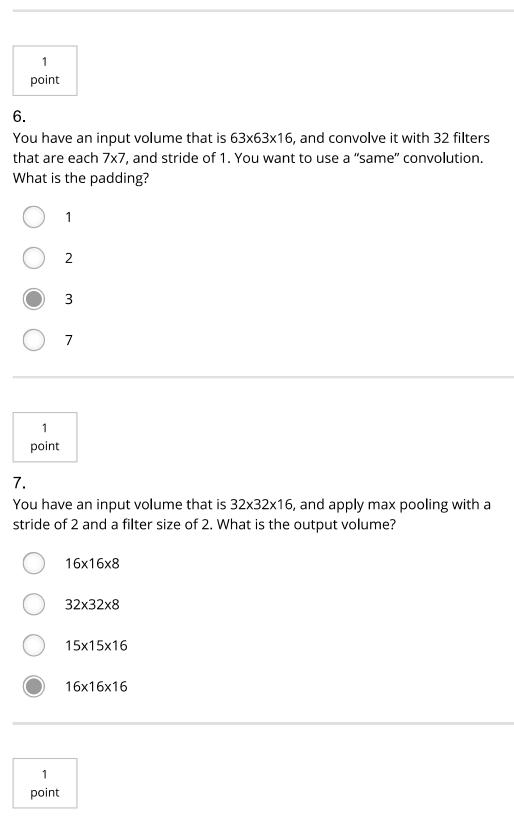
You have an input volume that is 15x15x8, and pad it using "pad=2." What is the dimension of the resulting volume (after padding)?

19x19x8

19x19x12

17x17x8





8.

Because pooling layers do not have parameters, they do not affect the backpropagation (derivatives) calculation.

True

Quiz, 10 questions

1 point	
convolu	are we talked about "parameter sharing" as a benefit of using autional networks. Which of the following statements about parameter in ConvNets are true? (Check all that apply.)
	It reduces the total number of parameters, thus reducing overfitting.
	It allows a feature detector to be used in multiple locations throughout the whole input image/input volume.
	It allows parameters learned for one task to be shared even for a different task (transfer learning).
	It allows gradient descent to set many of the parameters to zero, thus making the connections sparse.
1 point	
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point 10. In lectu	The we talked about "sparsity of connections" as a benefit of using autional layers. What does this mean? Each filter is connected to every channel in the previous layer. Each layer in a convolutional network is connected only to two other layers Each activation in the next layer depends on only a small number

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