1. What do you think applying this filter to a grayscale image will do? **1 point**

$$\begin{bmatrix} -1 & -1 & 2 \\ -1 & 2 & 1 \\ 2 & 1 & 1 \end{bmatrix}$$

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

49:53

Expand

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)? **1 point**

Expand

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)? **1 point**

- 7500
- 7600
- 2600
- 2501

49:52

Expand

4. You have an input volume that is $121 \times 121 \times 16$, and convolve it with 32 filters of 4×4, using a stride of 3 and no padding. What is the output volume? **1 point**

- $40 \times 40 \times 16$
- $118 \times 118 \times 32$
- $118 \times 118 \times 16$
- $40 \times 40 \times 32$

49:51

Expand

5. You have an input volume that is 61x61x32, and pad it using "pad=3". What is the dimension of the resulting volume (after padding)? **1 point**

- 61x61x35
- 67x67x32
- 64x64x32
- 64x64x35

49:51

Expand

6. You have a volume that is $64 \times 64 \times 32$, and convolve it with 40 filters of 9×9, and stride 1. You want to use a "same" convolution. What is the padding? **1 point**

- 4
- 6
- 8
- 0

49:50

Expand

7. You have an input volume that is 32x32x16, and apply max pooling with a stride of 2 and a filter size of 2. What is the output volume? **1 point**

- 16x16x8
- 16x16x16
- 32x32x8
- 15x15x16

49:49

Expand

8. Which of the following are hyperparameters of the pooling layers? (Choose all that apply) **1 point**

- Number of filters.
- Filter size.
- Average weights.
- Whether it is max or average.

49:49

Expand

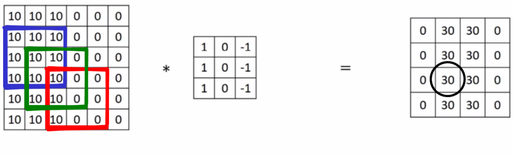
9. Which of the following are true about convolutional layers? (Check all that apply) **1 point**

- It allows parameters learned for one task to be shared even for a different task (transfer learning).
- It allows a feature detector to be used in multiple locations throughout the whole input volume.
- Convolutional layers provide sparsity of connections.
- It speeds up the training since we don't need to compute the gradient for convolutional layers.

49:48

Expand

10. The following image depicts the result of a convolution at the right when using a stride of 1 and the filter is shown right next. **1 point**



On which pixels does the circled pixel of the activation at the right depend?

- It depends on the pixels enclosed by the green square.
- It depends on the pixels enclosed by the red square.
- It depends on all the pixels of the image on the left.
- It depends on the pixels enclosed by the blue square.

49:48

Expand

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I, **Huzefa Shabbir Sadikot**, understand that submitting work that isn't my own may result in permanent failure of this course or deactivation of my Coursera account.

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