2. In LeNet - 5 we can see that as we get into deeper networks the number of channels increases while the height and width of the volume decreases. True/False?

- ● False

- ○ True

↗ Expand

⊗ **Incorrect**
Incorrect, since in its implementation only valid convolutions were used, without padding, the height and width of the volume were reduced at each convolution. These were also reduced by the POOL layers, whereas the number of channels was increased from 6 to 16.

The motivation of Residual Networks is that very deep networks are so good at fitting complex functions that when training them we almost always overfit the training data. True/False?

- ◉ False

- ○ True

↗ **Expand**

✓ **Correct**
Correct, very deep neural networks are hard to train and a deeper network does not always imply lower training error. Residual Networks allow us to train very deep neural networks.

8. Models trained for one computer vision task can't be used directly in another task. In most cases, we must change the softmax layer, or the last layers of the model and re-train for the new task. True/False?

- ○ False

- ◉ True

↗ **Expand**

✓ **Correct**
Yes, this is a good way to take advantage of open-source models trained more or less for the task you want to do. This may also help you save a great number of computational resources and data.

For a volume of $125 \times 125 \times 64$ which of the following can be used to reduce this to a $125 \times 125 \times 32$ volume?

- ◉ Use a 1×1 convolutional layer with a stride of 1, and 32 filters.

- ○ Use a POOL layer of size 2×2 with a stride of 2.

- ○ Use a 1×1 convolutional layer with a stride of 2, and 32 filters.

- ○ Use a POOL layer of size 2×2 but with a stride of 1.

↗ **Expand**

✓ **Correct**
Yes, since using 1×1 convolutions is a great way to reduce the depth dimension without affecting the other dimensions.