1. Which of the following do you typically see as you move to deeper layers in a ConvNet? 
   - My and Mz decrease, while Hz also decreases
   - My and Hz decrease, while Mz also decreases
   - My and Hz increase, while Mz also increases
   - Mz and My increase, while Hz decreases

2. Which of the following do you typically see in a ConvNet? (Check all that apply.)
   - Multiple CONV layers followed by a POOL layer
   - Multiple POOL layers followed by a CONV layer
   - FC layers in the first few layers
   - FC layers in the final few layers

3. In order to be able to build deep networks, we usually add pooling layers. So lowering the height and width of the activation volumes while convolutions are used with “valid” padding. Otherwise, we would downsparse the input of the model too quickly.
   - True
   - False

4. Training a deeper network (e.g., adding additional layers to the network) allows the network to learn more complex features and thus almost always results in lower training error. For this question, please choose referring to “learn” networks.
   - True
   - False

5. The following equation captures the computation in a ReLU block. What goes into the two blocks above? 
   - \( a_f + \max(0, x_f), \max(0, x_f) \)
   - \( a_f + \max(0, x_f), a_f \)
   - \( a_f + \max(0, x_f), \max(0, x_f) \)
   - \( a_f, \max(0, x_f) \)

6. Which one of the following statements on ResNet networks is true? (Check all that apply.)
   - A ResNet with 1 layers would have the same size of \( L \) deep connections in total.
   - Using a skip connection helps the gradient to backtrackpropagate and thus helps you to train deeper networks.
   - The skip connections convert the complex non-linear functions of the input to pass to a deeper layer in the network.
   - The skip connection makes it easy for the network to learn an identity mapping between the input and the output within the Mcheck block.

7. Supposing you have an input volume of dimension \( 16 \times 16 \times 4 \). How many parameters would a single 3x3 convolutional filter have including the bias?
   - 1
   - 4907
   - 19
   - 2

8. Suppose you have an input volume of dimension \( 4 \times 4 \times 4 \). Which of the following statements you agree with (Circle up to 3 statements if you agree with more than one)?
   - You can use a 1x1 convolutional layer to reduce \( L_y \) and \( L_z \).
   - You can use a 1x1 convolutional layer to reduce \( L_y \) but not \( L_z \).
   - You can use a pooling layer to reduce \( L_y \). and \( L_z \).
   - You can use a pooling layer to reduce \( L_y \) but not \( L_z \).

9. Which of the following statements on Inception Networks are true? (Check all that apply.)
   - Making an inception network deeper by stacking more inception blocks together do not hurt its overall performance.
   - Inception blocks usually use \( 1 \times 1 \) convolutions to reduce the input data volumes before applying \( 3 \times 3 \) and \( 5 \times 5 \) convolutions.
   - Inception networks incorporate a variety of network architectures familiar to computer vision, which randomly chooses network architectures on each layer and that has a similar regularizing effect as dropout.
   - A single inception block allows the network to use a combination of \( 1 \times 1 \), \( 3 \times 3 \), \( 5 \times 5 \) convolutions and pooling.

10. Which of the following are common reasons for using sparse-voxel implementations of ConvNets both the model and weight? (Check all that apply.)
    - A model trained for one computer vision task can usually be used to perform data augmentation even for a different computer vision task.
    - The same techniques for winning computer vision competitions, such as using multiscale crops of test data, are widely used in practical deployment on production system deployment ofConvNets.
    - It is a convenient way to get working an implementation of a complex computer vision model.
    - Parameters trained for one computer vision task often useful for processing to other computer vision tasks.