Suppose you want to compute the normal Convolution by a Convolution Matrix M. Suppose, in addition, you have 2x4 input image I a 2x2 kernel K like this:

I

5	3	5	7
2	8	1	9

K

3	1
2	4

Stride = 2; padding = 1. Compute the $M_{(5,20)}$

Risposta: ✖

Suppose you have an input volume of dimension 32x32x50. Which of the following layer you should use to get an output volume of 16x16x20?

○ A. A 1x1 Convolutional Layer with 20 filter, stride of 2 and no padding

○ B. A Convolutional Layer with 20 filter 3x3, stride of 1 and no padding

○ C. Maxpooling Layer with filter 2x2, stride of 1 and no padding

○ D. Maxpooling Layer with filter 2x2, stride of 2 and no padding

○ E. A 1x1 Convolutional Layer with 20 filter, stride of 1 and no padding

○ F. A Convolutional Layer with 20 filter 3x3, stride of 2 and no padding

Suppose your input is a color 50x50 RGB image, and you use the following ConvNet:

- A Convolutional layer with 64 filters that are each 3x3, option "same"

- A Convolution layer with 8 filters that are each 3x3, option "same"

- A Maxpooling layer with stride of 2 and filter size 2

- A Dense layer with 30 units

- An output unit with Sigmoid activation function.

How many parameters does this ConvNet have (including the bias parameters)?
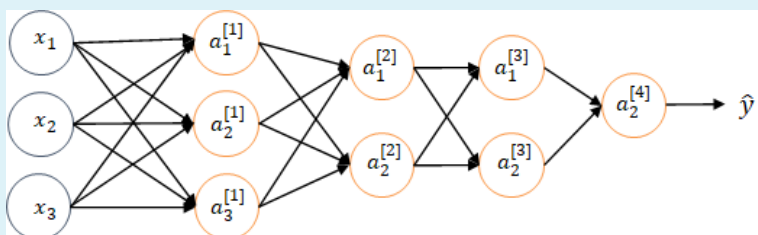
Risposta: [   ] ✖

Consider the following neural Network

- ☐ $W^{[2]}$ has shape (3,2)

- ☐ $W^{[2]}$ has shape (2,3)

- ☐ $W^{[4]}$ has shape (1,2)

- ☐ $b^{[2]}$ has shape (2,1)

- ☐ $b^{[4]}$ has shape (2,2)

- ☐ $b^{[4]}$ has shape (2,1)

- ☐ $W^{[2]}$ has shape (3,3)

Given an intermediate layer $z^{[l]}$ (values before the activation function) of a mini-batch B of size 3:

1,27	2,54	2,72
-1,75	2,13	1,12

The intermediate layer consists of two units corresponding at the matrix rows of $z^{[l]}$.

Compute the normalized $z^{[l]}$ before adding β and γ (two learnable parameters) and insert the normalized value of $z_1^{[l](1)}$ in the form below (note: the $z_1^{[l](1)}$ before the normalization is 1,27 - see table). Epsilon = 0,0001.

Round the figure to three digits after the decimal point. Use comma as separator.

Risposta: ✖

You are building a Deep Learning system based on Computer Vision for recognizing the quality of tomato. The system has to predict 1 when you have a tomato with top quality (y=1) and -1 in the opposite case (y=-1). Which one of these activation functions would you recommend using for the output layer?
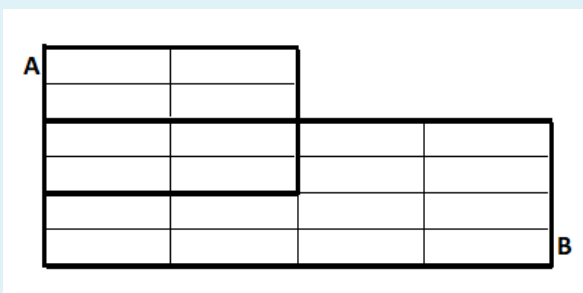
○ A. Tanh

○ B. Sigmoid

○ C. LeakyReLU

○ D. SoftMax

○ E. Relu

What is the IoU between these two boxes? The upper-left box is 4x2, and the lower-right box is 4x4.

Round the figure to two digits after the decimal point. Use comma as separator.

Risposta: ✖