Tutorial 7: Transfer Learning and Kernel Methods

1. With an example of four 2-dimensional points which are not linearly separable but can be transformed to be linearly separable in a feature space induced by a Gaussian kernel. What about any large number of any dimensional space?

2. True or false? kernel methods need very few parameters to define nonlinear transformations implicitly. Hence the complexity of an SVM classifier with a kernel is low and thus generalize well. Justify your answer.

3. From the following websites, you can find
    a. Pretrained models: https://pytorch.org/vision/stable/models.html. Download one pretrained model, print the model and check the shape of the output with a random input.
    b. Datasets: https://pytorch.org/vision/stable/datasets.html. Download one data set
    c. Transforms: https://pytorch.org/vision/stable/transforms.html Do necessary transformations to meet the input requirements for the pretrained model
    d. Extract the features from the last convolution layer