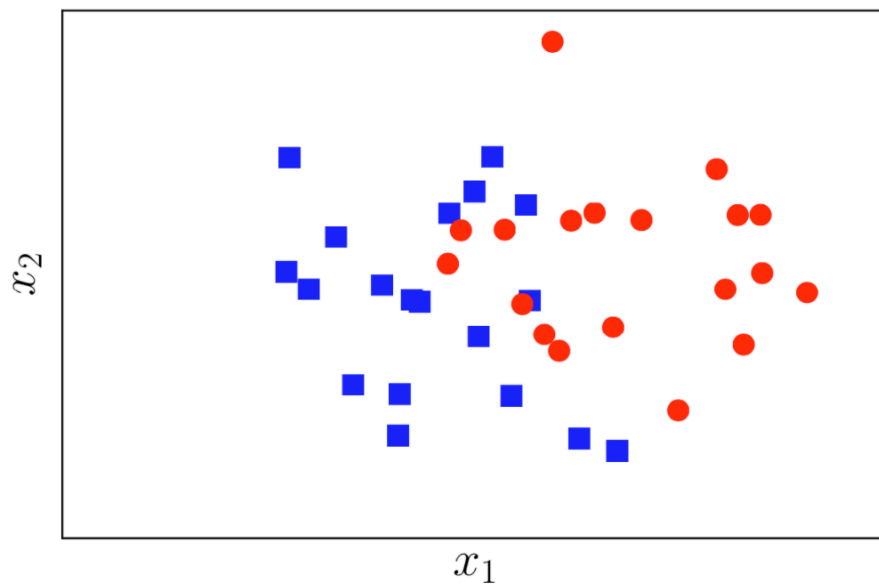
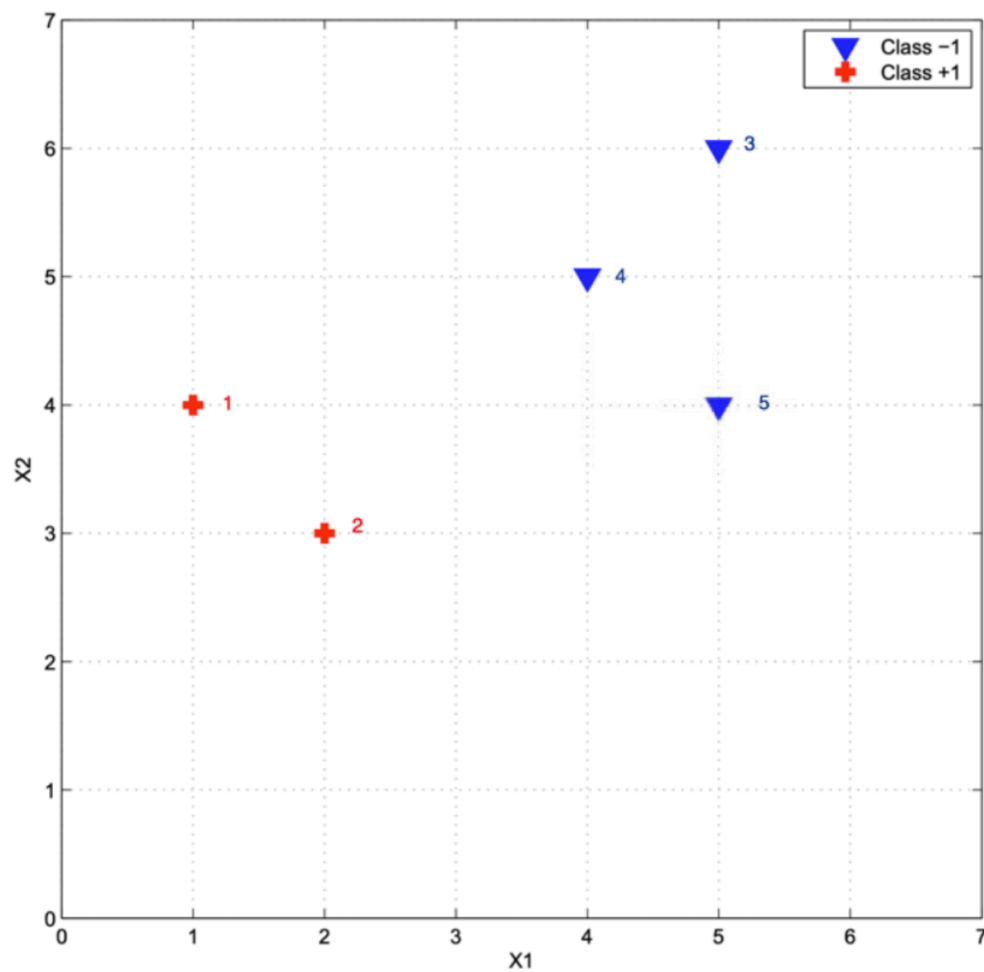


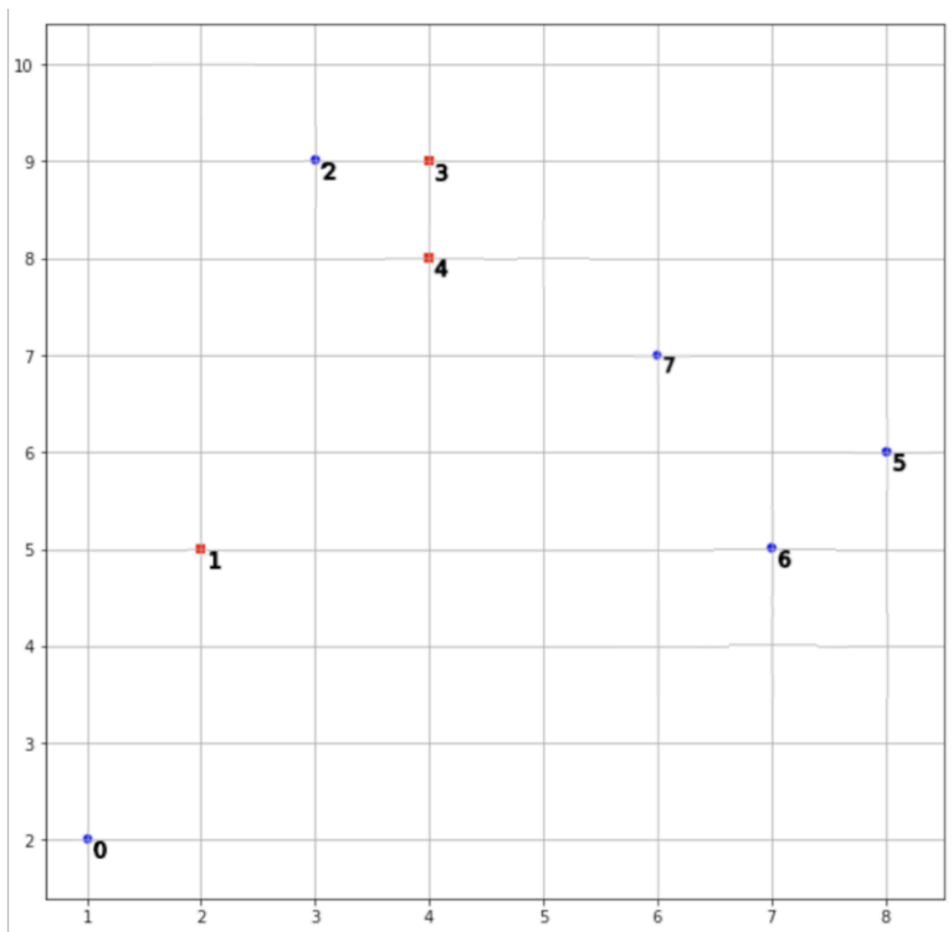
Question: Assume that we have to classify the dataset which has two-dimensional points with label 0 and 1 in the Figure below:



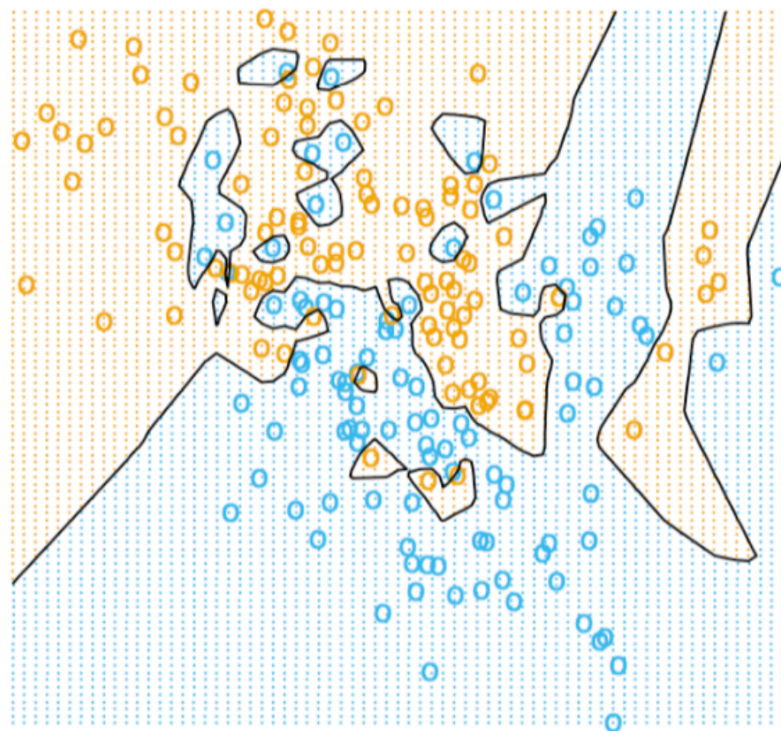
Question: Support vector machines (SVM) learn a decision boundary leading to the largest margin from both classes. You are training SVM on a tiny dataset with 4 points shown in the figure below:



Question: Using the k-means algorithm for clustering the data represented in the below:



Question: Which of below classifiers could have generated this decision boundary in Fig below



Question: The table below includes the dataset recording all attributes of both mammals and non-mammals

Name	Give Birth	Can Fly	Live in Water	Have Legs	Class
human	yes	no	no	yes	mammals
python	no	no	no	no	non-mammals
salmon	no	no	yes	no	non-mammals
whale	yes	no	yes	no	mammals
frog	no	no	sometimes	yes	non-mammals
komodo	no	no	no	yes	non-mammals
bat	yes	yes	no	yes	mammals
pigeon	no	yes	no	yes	non-mammals
cat	yes	no	no	yes	mammals
leopard shark	yes	no	yes	no	non-mammals
turtle	no	no	sometimes	yes	non-mammals
penguin	no	no	sometimes	yes	non-mammals
porcupine	yes	no	no	yes	mammals
eel	no	no	yes	no	non-mammals
salamander	no	no	sometimes	yes	non-mammals
gila monster	no	no	no	yes	non-mammals
platypus	no	no	no	yes	mammals
owl	no	yes	no	yes	non-mammals
dolphin	yes	no	yes	no	mammals
eagle	no	yes	no	yes	non-mammals

Question: Consider a linear regression problem of estimating a non-linear function f with 30 training data points. As shown in the figure below, three linear regressions were independently performed with polynomial features of polynomial orders 1, 4, and 15.

