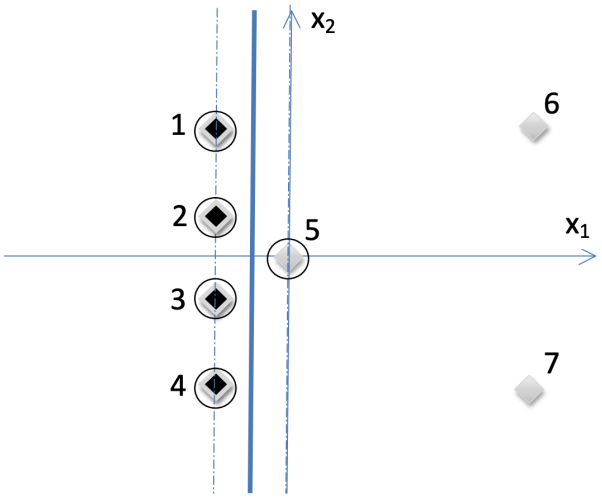
Consider the following training data, based on which we train a support vector machine (SVM).



(a) In the figure above, draw the decision boundary obtained by the SVM, as well as the lines defining the margin of separation.
See figure above.

(b) What is the classification accuracy of the training samples?
100%, since all sample are classified correctly using the above boundaries.

(c) The removal of which sample would move the decision boundary?
Sample 5 is the only support vector for one of the two classes. Therefore if this is removed, the decision boundary will change.

(d) If we use a leave-one-sample-out (LOSO) cross-validation, what would be the average classification accuracy based on all folds?
Note: During LOSO we have as many folds as the training data. In each fold, we assume one sample in the test and the remaining in the train.
Since the SVM boundary would remain the same if we removed any of the training samples, except Sample 5, all training samples except Sample 5 would be classified correctly during LOSO. Therefore the final accuracy would be $\frac{6}{7} \cdot 100\% = 85.7\%$.