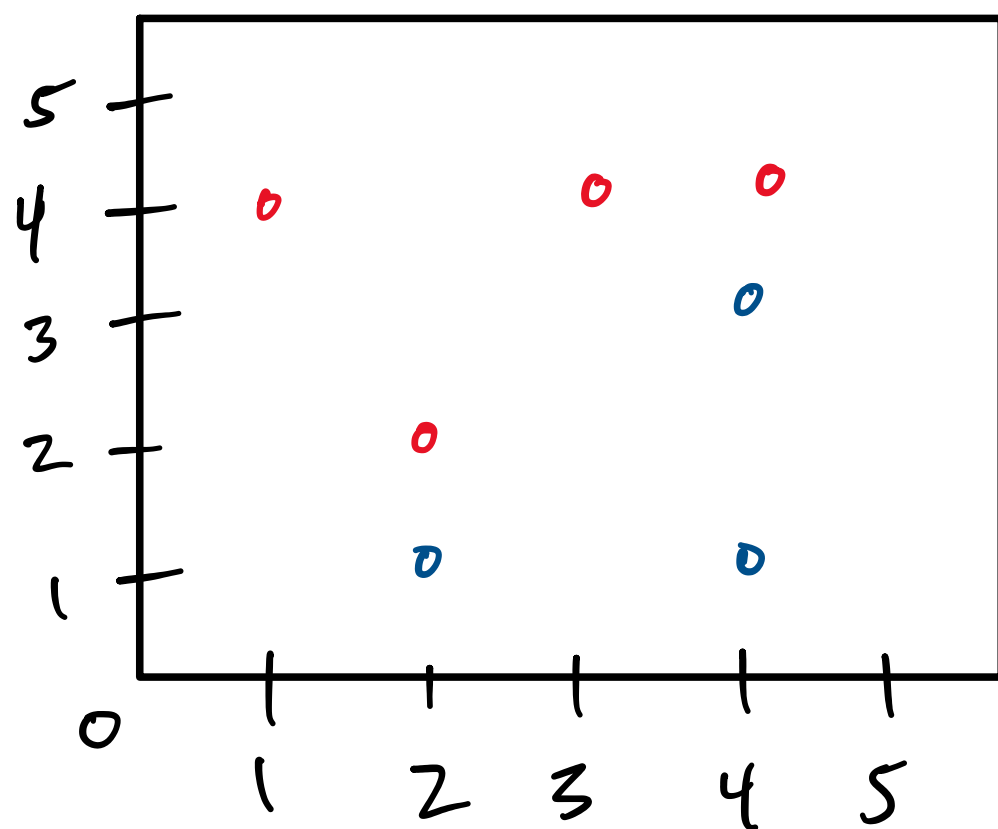
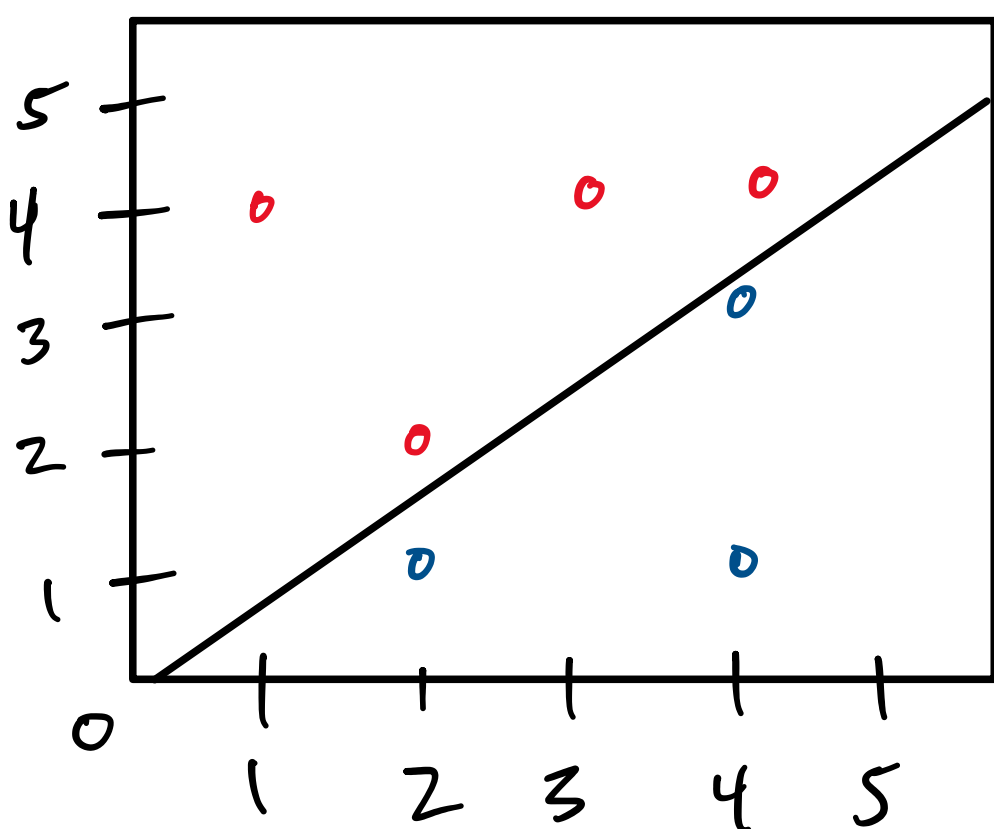


5.

a)

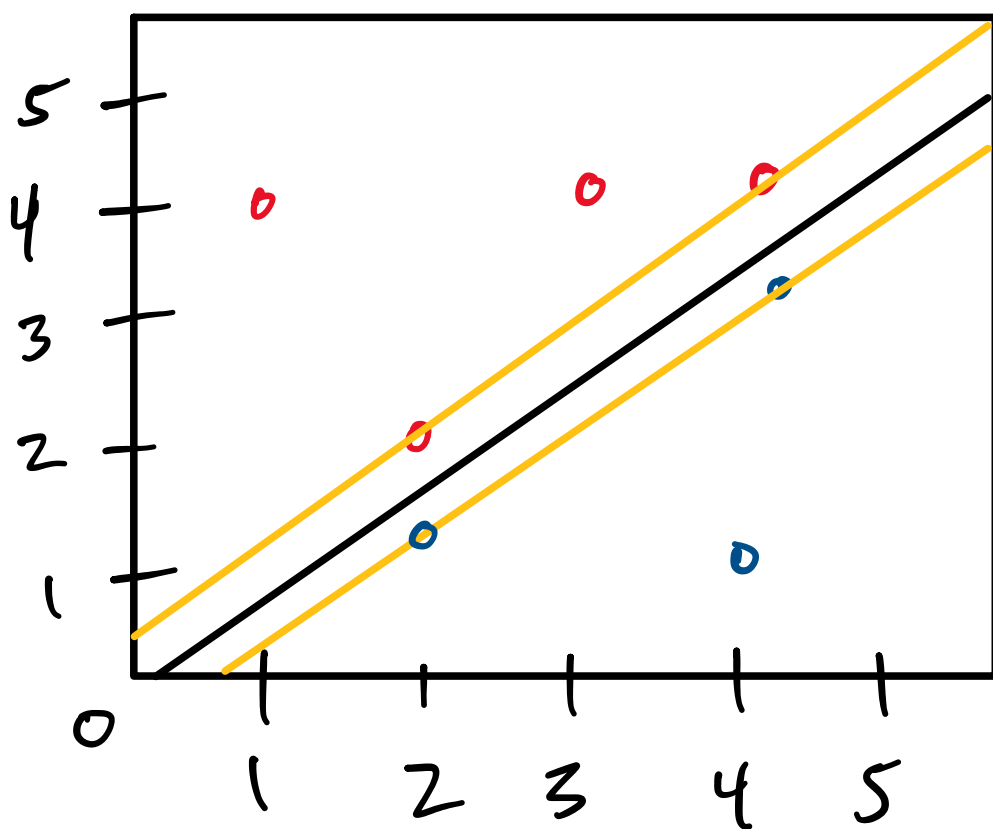


b).  $X_2 - X_1 + 0.5 = 0$

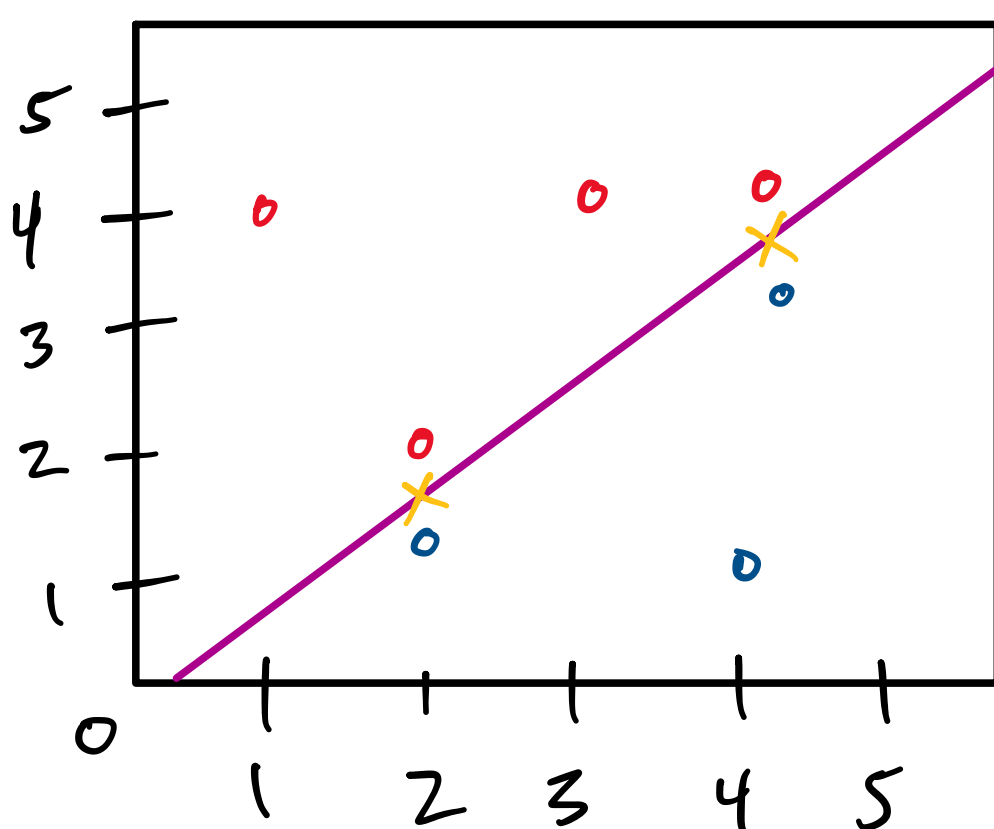


c). Class Red if  $0.5 - X_1 + X_2 > 0$   
and Blue otherwise.  
 $\beta_0 = 0.5$   $\beta_1 = -1$   $\beta_2 = 1$

d).



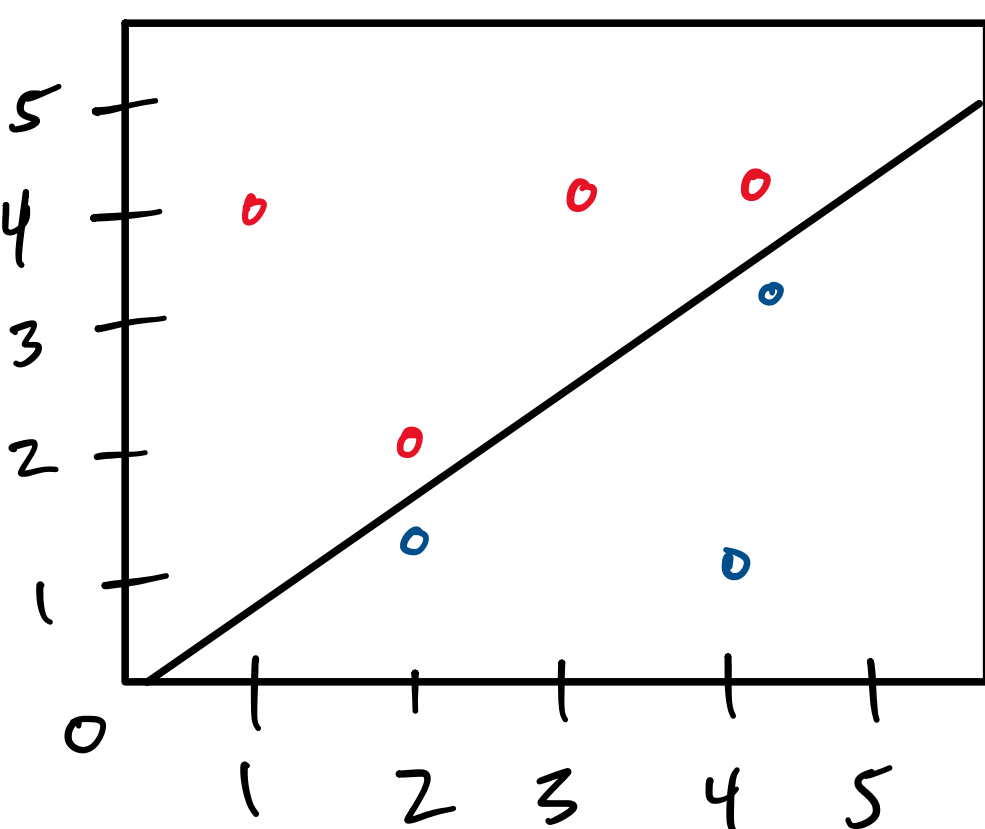
e)



f). Moving obs. #7 (4,1) slightly won't affect the maximal margin hyperplane as it's not a support vector and is far from the current ones, which solely determine the classifier's decision boundary.

g).

$-0.8 - X_1 + X_2 > 0$



h)

(4, 2)

