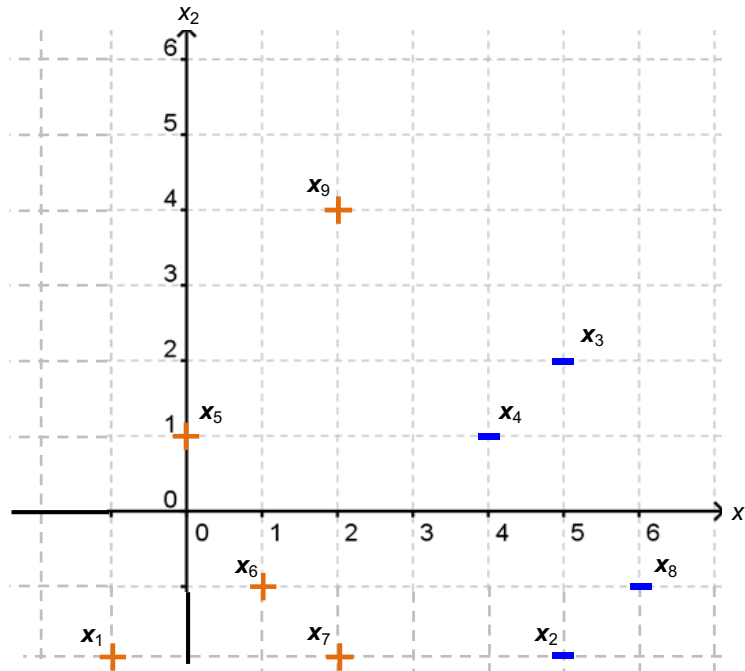


**SVM Optimization Practice**

*(find and work with a partner)*

*Incremental SVM optimization algorithm.* Let  $K = 4$  (initial dataset size). We will iteratively add points in order of their indices (not randomly). Run the incremental SVM optimization algorithm – at each stage, write out  $S$ , the support vectors, and which  $\alpha$  values end up being 0. At the end, what is the equation of the separating hyperplane?



Round 1:

- $S =$
- Support vectors:
- $\alpha$ 's that are 0:

Round 2:

- $S =$
- Support vectors:
- $\alpha$ 's that are 0:

Round 3:

- $S =$
- Support vectors:
- $\alpha$ 's that are 0:

Round 4:

- $S =$
- Support vectors:
- $\alpha$ 's that are 0: