

Mini-Assignment: SVMs

Due Feb 26 at 11:59pm **Points** 8 **Questions** 4
Available until Feb 27 at 2:59am **Time Limit** 60 Minutes
Allowed Attempts 2

This quiz was locked Feb 27 at 2:59am.

Attempt History

	Attempt	Time	Score
LATEST	<u>Attempt 1</u>	1 minute	8 out of 8

Score for this attempt: 8 out of 8

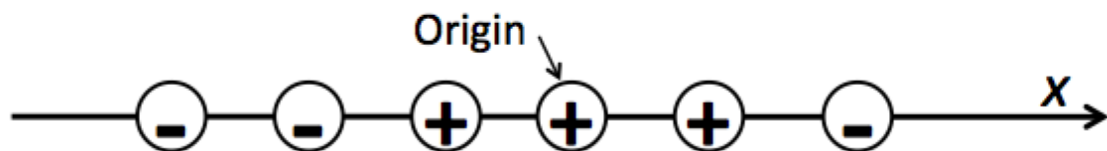
Submitted Feb 14 at 7:21pm

This attempt took 1 minute.

Question 1

2 / 2 pts

Given the following dataset in the 1-d space, which consists of 3 positive data points $\{-1, 0, 1\}$ and 3 negative data points $\{3, -2, -2\}$.



Are they linearly separable in original 1-d space?

☐ Cannot tell

☒ No

☐ Yes

Correct!

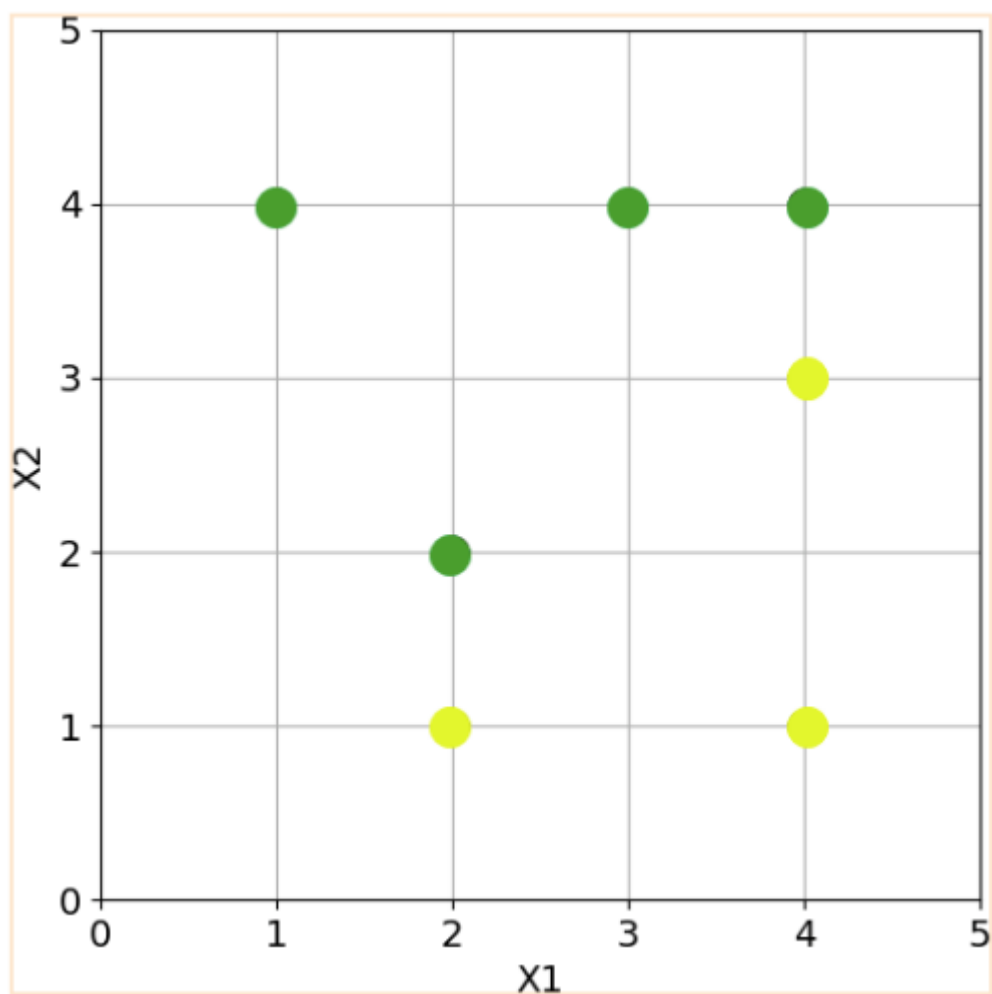
Question 2**2 / 2 pts**

Given a hyperplane defined by $w^t x + b = 0$, what is the distance of the origin to this hyperplane?

☐ $1/b$ ☐ b ☒ $\text{abs}(|b|/||w||)$ ☐ $\text{abs}(1/b)$ **Correct!****Question 3****2 / 2 pts**

The following table contains seven observations in two dimensions, X_1 and X_2 . Each observation has an associated class label, Y : Green and Yellow. The observations are plotted in a 2-Dimensional space. What is the equation for the maximal margin separating hyperplane?

X_1	X_2	Y
3	4	Green
2	2	Green
4	4	Green
1	4	Green
2	1	Yellow
4	3	Yellow
4	1	Yellow



Correct!

☐ $\frac{1}{2} + X_1 + X_2 = 0$

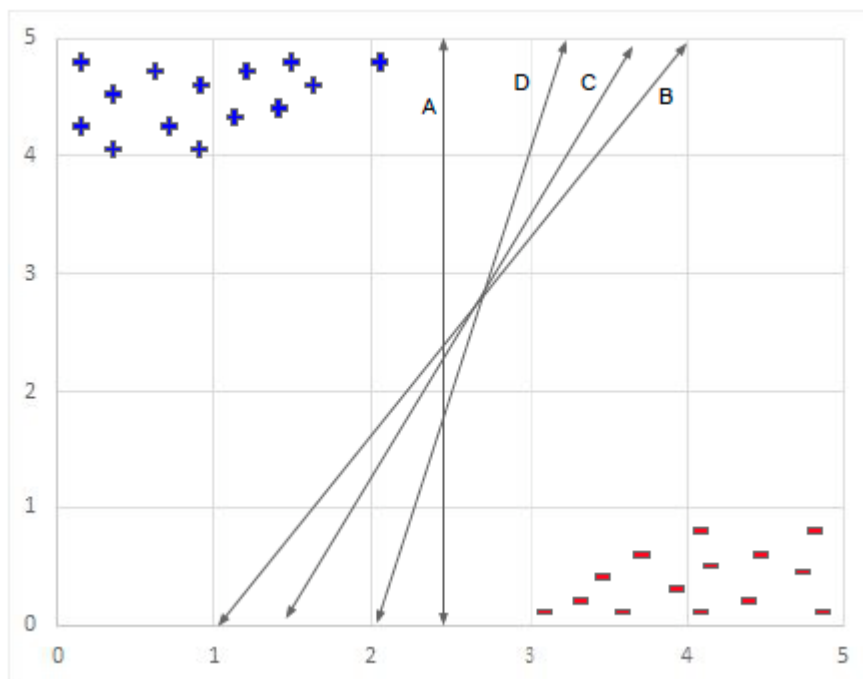
☐ $2 - X_1 + X_2 = 0$

☒ $\frac{1}{2} - X_1 + X_2 = 0$

☐ $\frac{1}{2} + X_1 - X_2 = 0$

Question 4**2 / 2 pts**

Given the following feature space with two classes (plus and minus), which hyperplane represents the best choice for a hyperplane?

**Correct!**

☒ $y = \frac{5}{3}x - \frac{5}{3}$

☐ $y = 2x - 4$

☐ $y = \frac{4}{3}x - \frac{4}{3}$

☐ $y = x - 1$

Quiz Score: **8** out of 8