

Quiz 8

Student Name: _____

1. (2 points) SVM with *hard* margins: complete the minimization problem

$$\min_{\mathbf{w}, b} \left\{ \text{[blank]} \right\} \quad \text{s.t.} \quad \forall n: t_n(w^T \phi(x_n) + b) \geq \text{[blank]}$$

2. (2 points) SVM with *soft* constraints: complete the minimization problem

$$\min_{\mathbf{w}, b} \left\{ \text{[blank]} \right\} \quad \text{s.t.} \quad \forall n: \begin{cases} t_n(w^T \phi(x_n) + b) \geq \text{[blank]} \\ \text{[blank]} \geq 0 \end{cases}$$

3. (1 point) Which of the above models *fails* when the data is *not linearly separable*?