HW0: Basic concepts and geometry

Hand in at: `http://www.cs.utah.edu/~hal/handin.pl?course=cs726`. Remember that only PDF submissions are accepted. We encourage using LaTeX to produce your writeups. See `hw00.tex` for an example of how to do so. You can make a `.pdf` out of the `.tex` by running "`pdflatex hw00.tex`".

1. Give two reasons why simply memorizing training data and doing table lookups is insufficient for learning.

2. In two sentences, explain the difference between a parameter and a hyperparameter (you may focus on the decision tree model).

3. For an overfit model, do you expect the training error $\hat{\epsilon}$ to be greater or less than the text error ϵ?

4. A learning algorithm should never look at test data. You shouldn't either. Why not (one sentence is fine)?

5. What happens to a KNN classifier if the scale of one feature dominates (i.e., is 1000 times larger than) all the others? (One sentence is fine.)