

# CS385-Assignment 1

Due Tuesday, September 11

August 27, 2007

## 1 Problems from the Text

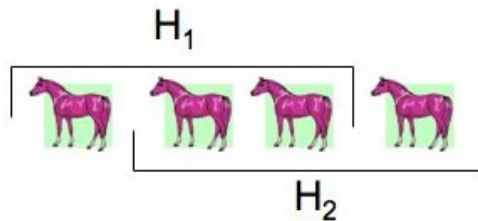
Chapter 0 is a review of Discrete Mathematics. You should work (but need not hand in) Exercises 0.1-0.3 and 0.6.

**You should hand in Exercise 0.5, Problem 0.10, and Problem 0.11.**

Some notes on these problems:

In 0.5, it is helpful to have a simple notation for the number of elements in a set. The standard notation is the same as the one used for the absolute value of a number: If  $A$  is a set, then  $|A|$  denotes the number of elements of  $A$ . You can then write the answer to the first question in 0.5 as a very simple equation. Your “explanation” can be a formal proof. In fact, this problem does lend itself to a proof by induction.

In case you can't follow the bogus argument in 0.11, here is a picture of the inductive step of the proof in the case where  $h = 4$ , proving that all sets of four horses have the same color under the assumption that all sets of three horses have the same color.



## 2 Problems from the Lecture Notes

Do Problems 1 and 3(a,b) from the Lecture Notes. Do not hesitate to request clarification if you don't understand what you are being asked to do in 3(b).