CSCI 6350 Spring 2005 **Name _____**
Homework 5 (due beginning of class, Thursday Feb 16th)

We have collected a data set of 14 data objects (shown below) that will help us determine whether a particular mushroom is edible or poisonous. The three attributes chosen for describing each day are :

1. Cap Shape: bell, flat, or convex
2. Cap Color: brown, grey
3. Odor: almond, spicy, foul

We would like to learn the definition of edible and poisonous mushroom in the form of a decision tree. Use *information gain* as the attribute selection criterion to build a decision tree for the data. Show all computations involved in attribute selection on the **first level** of the tree building process.

Data:

Object	**Cap Shape**	**Cap color**	**Odor**	**class**
X1	bell	brown	almond	edible
X2	flat	grey	almond	edible
X3	convex	grey	spicy	poisonous
X4	bell	brown	almond	edible
X5	flat	grey	almond	edible
X6	flat	grey	spicy	edible
X7	convex	grey	almond	edible
X8	bell	brown	almond	edible
X9	convex	brown	foul	poisonous
X10	bell	brown	spicy	edible
X11	bell	grey	almond	edible
X12	convex	grey	spicy	poisonous
X13	flat	brown	almond	edible
X14	flat	grey	foul	poisonous