Kurt Medley Machine Learning HW1 CPAT Spring 2013

1.

```
If wage increase 1st year <= 2.5 then bad
```

If wage increase 1st year > 2.5 and statutory holidays > 10 then good

If wage increase 1st year > 2.5 and statutory holidays <= 10 and wage increase 1st year <= 4 then bad

If wage increase 1st year > 2.5 and statutory holidays <= 10 and wage increase 1st year > 4 then good

Ruleset:

If
$$P == F$$
 and $Q == H$ then 1 or
If $P == T$ and $Q == L$ then 1 else 0

- 3. Attributes for a credit rating might be:
 - @attribute outstanding loans accumulated
 - @attribute income
 - @attribute delinquent?
 - @attribute Felony?

Sample Instance:

Name Loans Accumulated Income Delinquent? Felon? Kurt \$352.23 \$5 billion No Yes

4. Re-identification involves the utilization of records that are current and useful while simultaneously avoiding ethical stipulations to whom which this data may effect. Is it lawful? Should the data harvest retain anonymity or is the data free to divulge? These are problems that re-identification may propagate.

5.

Classification learning is supervised and implies that success can be measured on data for which labels are generated or known beforehand. The measure is usually subjective and the outcome is the class of the example.

Association learning tactics can predict any attribute, not just the generalized class. They can predict the value of multiple attributes at a time.

Clustering is unsupervised; it identifies groups that have similarities (or dissimilarities). Success is

often measured subjectively.

Numeric prediction is basically classification learning with a numeric label. It is supervised and success is measured on test data.

Given the tables 1.2, 1.3, 2.2, classification learning can make predictions as to whether or not a person should play or not given nominal classes and a series of boolean outcomes. Numeric prediction can predict outcomes like "play" given a series of trained numeric values like humidity and temperature. Learning association can be used to predict specific attributes given previously learned data. Clustering can infer values based on similarities (or dissimilarities).

6. Raising the number of possible rulesets (288) to the power of the number of maximum possible rules $(14) = 2.7 \times 10^{4}$