Exercises on probabilistic methods

0.1 Naive Bayes

Classify `<single,light,one>` with Naive Bayes given the following examples:

```
Healthy: * <single,dark,one>
         * <single,light,two>
         * <double,light,one>

Virulent: * <single,dark,two>
          * <double,dark,one>
          * <double,light,two>
```

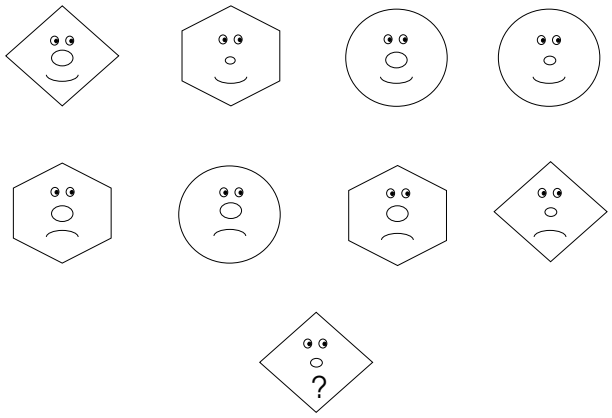
0.2 Text Classification

Classify the sentence "Cats eat mice and dogs bury bones." given the following two examples:

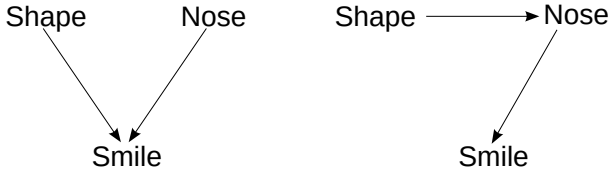
- Class A: "The cat crabs the curls off the stairs."
- Class B: "It's raining cats and dogs."

and given Voc = {Cat, Crab, Curl, Stairs, Rain, Dog}.

0.3 Bayesian Networks



1. Predict wether the last face is smiling or not using Naive Bayes.
2. Calculate all the probability tables for each of the Bayesian networks shown in the figure below according to the given examples-faces. Predict the class of the last face according to each of the networks.



3. Draw the Bayesian network that is equivalent to Naive Bayes.