HW 1 Text Classification and Naïve Bayes

1.

```
for label in y:
    index = np.where(classes == label)[0][0]
    prior[index] += 1.0
prior /= sum(prior)


for feature, label in zip(x,y):
    index = np.where(classes == label)[0][0]
    likelihood[:, index] += feature


if self.smooth:
    denom = np.sum(likelihood, axis=0) + self.smooth_param * n_words
    likelihood += 1.0
    likelihood /= denom
else:
    likelihood /= np.sum(likelihood, axis=0)
```

2.

Accuracy on training set: 0.980000, on test set: 0.811000