

Exercises

- 4.1 Assume the following likelihoods for each word being part of a positive or negative movie review, and equal prior probabilities for each class.

	pos	neg
I	0.09	0.16
always	0.07	0.06
like	0.29	0.06
foreign	0.04	0.15
films	0.08	0.11

What class will Naive bayes assign to the sentence "I always like foreign films."?

- 4.2 Given the following short movie reviews, each labeled with a genre, either comedy or action:

1. fun, couple, love, love **comedy**
2. fast, furious, shoot **action**
3. couple, fly, fast, fun, fun **comedy**
4. furious, shoot, shoot, fun **action**
5. fly, fast, shoot, love **action**

and a new document D:

fast, couple, shoot, fly

compute the most likely class for D. Assume a naive Bayes classifier and use add-1 smoothing for the likelihoods.