

## Homework 9

**Student Number:**

**Name:**

**Problem 1.** (10 points) Why is positive feedback likely to be more useful than negative feedback to an IR system? Why might only using one nonrelevant document be more effective than using several?

**Problem 2.** (30 points) Omar has implemented a relevance feedback web search system, where he is going to do relevance feedback based only on words in the title text returned for a page (for efficiency). The user is going to rank 3 results. The first user, Jinxing, queries for:

*banana slug*

and the top three titles returned are:

*banana slug Ariolimax columbianus*  
*Santa Cruz mountains banana slug*  
*Santa Cruz Campus Mascot*

Jinxing judges the first two documents Relevant, and the third Not Relevant. Assume that Omar's search engine uses term frequency but no length normalization nor IDF. Assume that he is using the Rocchio relevance feedback mechanism, with  $\alpha = \beta = \gamma = 1$ . Show the final revised query that would be run.

**Problem 3.** (30 points) In Rocchio's algorithm, what weight setting for  $\alpha/\beta/\gamma$  does a "Find pages like this one" search correspond to?

**Problem 4.** (30 points) Give three reasons why relevance feedback has been little used in web search.