1. **Relevance feedback & query expansion**

1. A user Jon looks for information about populations of banana slugs and issues a query *banana slug* to the search engine *RFSearch*, which supports relevance feedback. For this query, *RFSearch* delivers the following top-3 results:

   \[ D_1 = \text{"banana slug Ariolimax columbianus"} \]
   \[ D_2 = \text{"Santa Cruz mountains banana slug"} \]
   \[ D_3 = \text{"Santa Cruz Campus Mascot"} \]

   Jon marks the documents \( D_1, D_2 \) as relevant and \( D_3 \) as not relevant for his information need. *RFSearch* uses term frequency and the Rocchio RF algorithm, with \( \alpha = \beta = \gamma = 1 \). Which search query will be executed next based on Jon’s feedback? Specify the weights for each query term. Sort the terms in an alphabetical order.

2. Specify \( \alpha, \beta, \gamma \) values of the Rocchio RF algorithm that facilitate a query for retrieving pages similar to the relevant pages within the search result.