Qn V.[12pt] A search engine returned 5 documents in response to a query. The documents are completely decribed in terms of the weights and type of keywords they have in the following table:

	Computer	Repair	Science
D1	6	4	0
D2	3	0	7
D3	1	6	3
D4	1	3	6
D5	6	2	2

Suppose you are trying to cluster these results using K-means clustering algorithm into 2 clusters. Assume you start the clusters off with D3 and D4 as the initial cluster centers. Assume that you are using a bag-based similarity measure

$$sim(d1,d2) = \frac{|B1 \cap B2|}{|B1 \cup B2|}.$$

Show the operation of the K-means algorithm on this data. For each iteration of the K-means, show the cluster dissimilarity measure (which is defined as the sum of the similarities of docs from their respective cluster centers). You are allowed to use calculators. Show all details of your work if you expect partial credit.