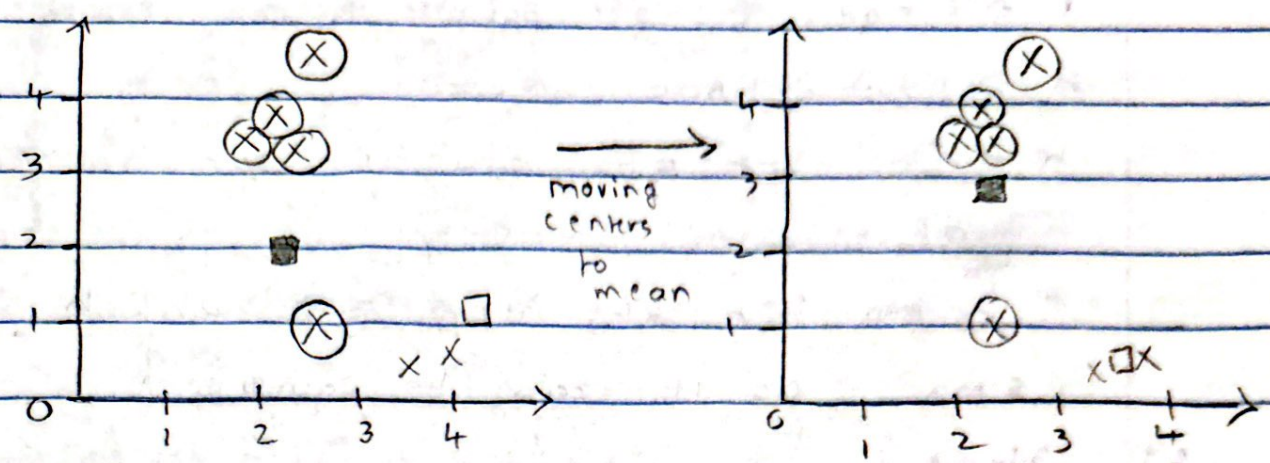
Question 5	Spring 2015 Final Question 9	Fall 2013 Final Question 8	~~Spr~~

a] It converges in 2 steps

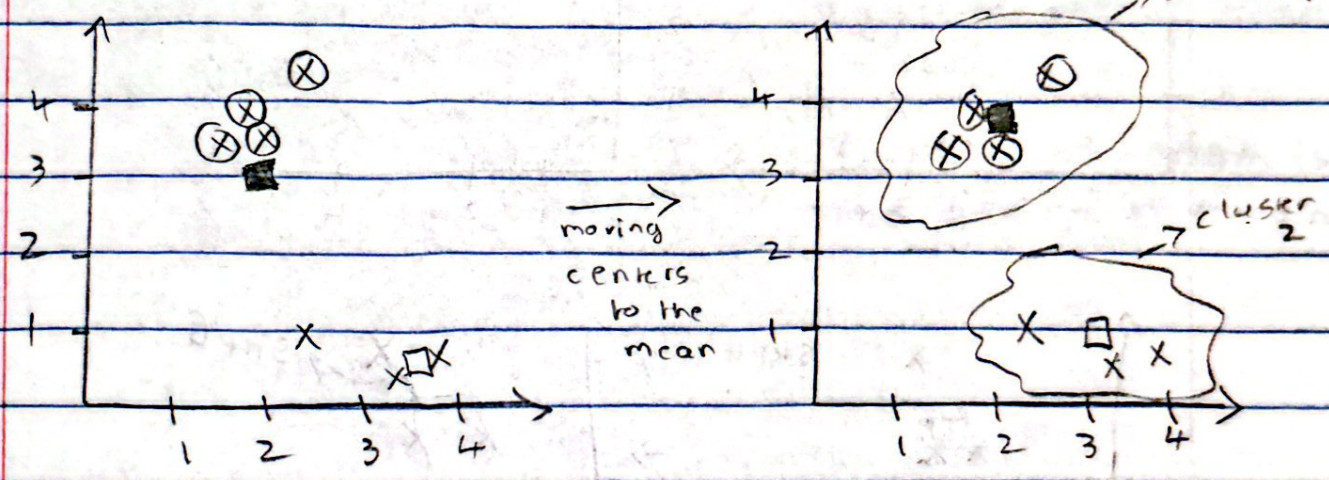
Step 1]



Points marked with ○ go to cluster 1 ■

Step 2]

1 point from cluster ■ will go to □



b] No, single link has $O(n^2)$ time complexity & complete-link has $O(n^3)$. This is because minimum distances remain same even if we merge two cluster, we only need to calculate them once. After merging ~~them~~ 2 clusters, new min is min of both original clusters.

This is not true for the complete link it

Note: Time complexity of Complete link clustering is O(n^2log(n)) using priority queue.