

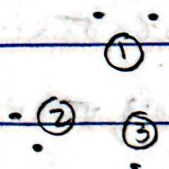
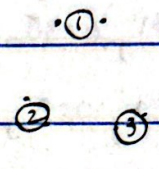
midterm 2 fall 2023	fall 2019 midterm 2
Question 5]	Question 4] b]

a) False.

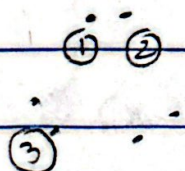
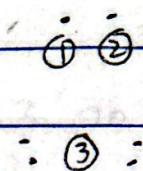
→ Random Dataset

Case I

Initialise centers


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 Globally optimal solution

Case II (counterexample)


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 locally optimal solution

Random initializations of centroids causes k-means to produce locally optimal solutions. Even heuristic approaches cannot guarantee a global optimal solution.