Q4.a

Yes, The algorithm is able to find the right clusters.
Output:
Data Points Read [[1.0], [2.0], [3.0], [4.0], [8.0], [9.0], [10.0], [11.0], [12.0], [24.0], [28.0], [32.0], [36.0], [40.0]]
Enter Clusters count: 3
Enter Algorithm to Run
1.K Means
2.K Medians
: 1
Enter your choice for initial Representative selection
1.Random from Datapoints
2.Select from Datapoints
3.Input from ',' separated file:
: 2
1 [1.0]
2 [2.0]
3 [3.0]
4 [4.0]
5 [8.0]
6 [9.0]
7 [10.0]
8 [11.0]
9 [12.0]
10   [24.0]
11   [28.0]
12   [32.0]
13   [36.0]
14   [40.0]
Enter ',' separated index of 3 data points: 1,8,11
Initial Seed Selected [[11.0], [1.0], [28.0]]

Representatives:
[[11.0], [1.0], [28.0]]
Clusters Formed:
Cluster 1 [[8.0], [9.0], [10.0], [11.0], [12.0]]
Cluster 2 [[1.0], [2.0], [3.0], [4.0]]
Cluster 3 [[24.0], [28.0], [32.0], [36.0], [40.0]]

Representatives:
[[10.0], [2.5], [32.0]]
Clusters Formed:
Cluster 1 [[8.0], [9.0], [10.0], [11.0], [12.0]]
Cluster 2 [[1.0], [2.0], [3.0], [4.0]]
Cluster 3 [[24.0], [28.0], [32.0], [36.0], [40.0]]

Iterations count: 2

Converging Representative: [[10.0], [2.5], [32.0]]
Clusters Formed:
Cluster 1 [[8.0], [9.0], [10.0], [11.0], [12.0]]
Cluster 2 [[1.0], [2.0], [3.0], [4.0]]
Cluster 3 [[24.0], [28.0], [32.0], [36.0], [40.0]]

Q4.b
Yes, The algorithm is able to find the right clusters.
Output:
Data Points Read [[1.0], [2.0], [3.0], [4.0], [8.0], [9.0], [10.0], [11.0], [12.0], [24.0], [28.0], [32.0], [36.0], [40.0]]
Enter Clusters count: 3
Enter Algorithm to Run
1.K Means
2.K Medians
: 1
Enter your choice for initial Representative selection
1.Random from Datapoints
2.Select from Datapoints
3.Input from ',' separated file:
: 2
1   [1.0]
2   [2.0]
3   [3.0]
4   [4.0]
5   [8.0]
6   [9.0]
7   [10.0]
8   [11.0]
9   [12.0]
10   [24.0]
11   [28.0]
12   [32.0]
13   [36.0]
14   [40.0]
Enter ',' separated index of 3 data points: 1,2,3
Initial Seed Selected [[1.0], [2.0], [3.0]]

Representatives:
[[1.0], [2.0], [3.0]]
Clusters Formed:
Cluster 1 [[1.0]]
Cluster 2 [[2.0]]
Cluster 3 [[3.0], [4.0], [8.0], [9.0], [10.0], [11.0], [12.0], [24.0], [28.0], [32.0], [36.0], [40.0]]

Representatives:
[[1.0], [2.0], [18.083333333333332]]
Clusters Formed:
Cluster 1 [[1.0]]
Cluster 2 [[2.0], [3.0], [4.0], [8.0], [9.0], [10.0]]
Cluster 3 [[11.0], [12.0], [24.0], [28.0], [32.0], [36.0], [40.0]]

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Assignment 2

Representatives:
[[1.0], [6.0], [26.142857142857142]]
Clusters Formed:
Cluster 1 [[1.0], [2.0], [3.0]]
Cluster 2 [[4.0], [8.0], [9.0], [10.0], [11.0], [12.0]]
Cluster 3 [[24.0], [28.0], [32.0], [36.0], [40.0]]

Representatives:
[[2.0], [9.0], [32.0]]
Clusters Formed:
Cluster 1 [[1.0], [2.0], [3.0], [4.0]]
Cluster 2 [[8.0], [9.0], [10.0], [11.0], [12.0]]
Cluster 3 [[24.0], [28.0], [32.0], [36.0], [40.0]]

Representatives:
[[2.5], [10.0], [32.0]]
Clusters Formed:
Cluster 1 [[1.0], [2.0], [3.0], [4.0]]
Cluster 2 [[8.0], [9.0], [10.0], [11.0], [12.0]]
Cluster 3 [[24.0], [28.0], [32.0], [36.0], [40.0]]

Iterations count: 5
Converging Representative: [[2.5], [10.0], [32.0]]
Clusters Formed:
Cluster 1 [[1.0], [2.0], [3.0], [4.0]]
Cluster 2 [[8.0], [9.0], [10.0], [11.0], [12.0]]
Cluster 3 [[24.0], [28.0], [32.0], [36.0], [40.0]]

Q4.c
It depends on the initial seed Representative set how soon the convergence will reach and which element's will belong to which cluster and it is not always true that every time with different seed same clusters will form different seed may results in different clusters with different datapoints.