

# Break & Quiz

**Q 2.1:** You have seven 2-dimensional points. You run 3-means on it, with initial clusters

$$C_1 = \{(2, 2), (4, 4), (6, 6)\}, C_2 = \{(0, 4), (4, 0)\}, C_3 = \{(5, 5), (9, 9)\}$$

Cluster centroids at the next iteration are?

- A.  $C_1: (4, 4), C_2: (2, 2), C_3: (7, 7)$
- B.  $C_1: (6, 6), C_2: (4, 4), C_3: (9, 9)$
- C.  $C_1: (2, 2), C_2: (0, 0), C_3: (5, 5)$
- D.  $C_1: (2, 6), C_2: (0, 4), C_3: (5, 9)$

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Cluster centroids at the next iteration are?

- **A.  $C_1: (4,4)$ ,  $C_2: (2,2)$ ,  $C_3: (7,7)$**
- B.  $C_1: (6,6)$ ,  $C_2: (4,4)$ ,  $C_3: (9,9)$
- C.  $C_1: (2,2)$ ,  $C_2: (0,0)$ ,  $C_3: (5,5)$
- D.  $C_1: (2,6)$ ,  $C_2: (0,4)$ ,  $C_3: (5,9)$

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**Q 2.2:** If we do hierarchical clustering on  $n$  points, the maximum depth of the resulting tree is

- A. 2
- B.  $\log n$
- C.  $n/2$
- D.  $n-1$

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