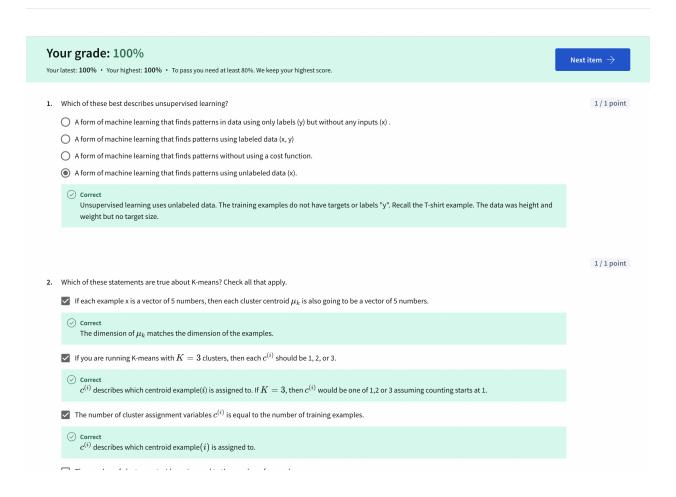
## UnsupervisedLearning - WEEK1Clustering - QUIZ 1 - Clustering

Link: <u>UnsupervisedLearning - WEEK1 - Clustering - QUIZ 1 - Clustering</u>



3. You run K-means 100 times with different initializations. How should you pick from the 100 resulting solutions?  $\bigcirc \ \ \text{Pick the last one (i.e., the 100th random initialization) because K-means always improves over time}$ lacksquare Pick the one with the lowest cost JO Pick randomly -- that was the point of random initialization. O Average all 100 solutions together. **⊘** Correct K-means can arrive at different solutions depending on initialization. After running repeated trials, choose the solution with the lowest cost. 4. You run K-means and compute the value of the cost function  $J(c^{(1)},\ldots,c^{(m)},\mu_1,\ldots,\mu_K)$  after each iteration. Which of these statements should be true? 1/1 point  $\ensuremath{\bigodot}$  The cost will either decrease or stay the same after each iteration. . O There is no cost function for the K-means algorithm. The cost can be greater or smaller than the cost in the previous iteration, but it decreases in the long run. O Because K-means tries to maximize cost, the cost is always greater than or equal to the cost in the previous iteration. **⊘** Correct The cost never increases. K-means always converges. 5. In K-means, the elbow method is a method to 1/1 point Choose the best number of samples in the dataset Choose the best random initialization O Choose the maximum number of examples for each cluster

The elbow method plots a graph between the number of clusters K and the cost function. The 'bend' in the cost curve can suggest a natural value for K.

Choose the number of clusters K

Note that this feature may not exist or be significant in some data sets.

**⊘** Correct