✅ **Congratulations! You passed!**

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1. Which of the following statements correctly describe key aspects of k-means? Select all that apply.

1 / 1 point

☐ The value of k is a standard that never changes.

☑ To avoid poor clustering, data professionals run a k-means model with different starting positions for the centroids.

⊘ **Correct**

☑ K-means clusters are defined by a central point, called a centroid.

⊘ **Correct**

☑ K-means is an unsupervised partitioning algorithm.

⊘ **Correct**

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2. A data professional chooses the number of centroids to use in a k-means model and places them in the data space. Which step of the model-creation process is the data professional working in?

1 / 1 point

◉ Step one

◯ Step two

◯ Step three

◯ Step four

⊘ **Correct**

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3. Fill in the blank: In order to evaluate the intracluster space in a k-means model, a data professional uses the inertia metric. This is the _____ of the squared distances between each observation and its nearest centroid.

0 / 1 point

◯ ratio

◯ sum

◉ average

◯ difference

⊗ **Incorrect**
Review [the video about metrics for k-means clustering](#) ⎘.

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4. A junior data professional creates a k-means model. They observe a silhouette score coefficient with a value close to negative one.? What conclusion should they draw in this scenario?

1 / 1 point

◯ The observation is suitably within its own cluster and well separated from other clusters.

◯ The observation is on the boundary between clusters.

◯ The observation is in the correct cluster.

◉ The observation may be in the wrong cluster.

⊘ **Correct**

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5. Which Python function fits a k-means model for multiple values of k by calculating the inertia for each value, appending it to a list, and returning that list?

1 / 1 point

◯ labels

◉ k-means inertia

◯ silhouette score

◯ cluster_image

⊘ **Correct**

6. Which of the following statements accurately describe the elbow method? Select all that apply.

`1 / 1 point`

☑ The sharpest bend in the curve is usually the model that will provide the most meaningful clustering of data.

⊘ **Correct**

☑ There is not always an obvious elbow.

⊘ **Correct**

☑ The elbow method uses a line plot to visually compare the inertias of different models.

⊘ **Correct**

☐ When using the elbow method, data professionals aim to find the smoothest part of the curve.