## Quiz 5

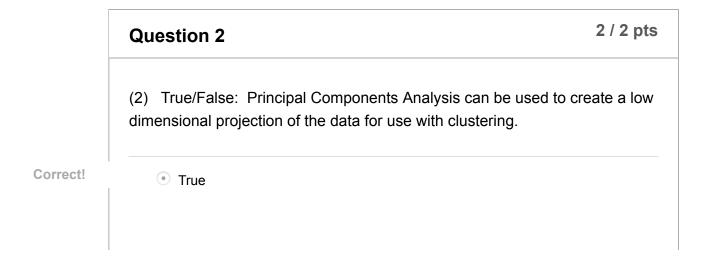
**Due** No due date **Points** 20 **Questions** 10 **Time Limit** None

## **Attempt History**

	Attempt	Time	Score	
LATEST	Attempt 1	32 minutes	16 out of 20	

Score for this quiz: **16** out of 20 Submitted Nov 19 at 1:17pm This attempt took 32 minutes.

	Question 1	2 / 2 pts
	(1) True/False: Clustering is an unsupervised learning problem.	
Correct!	<ul> <li>True</li> <li>True – When we use cluster analysis we typically do not have a labe a response variable for each observation, hence clustering is an unsupervised learning problem.</li> </ul>	el or
	False	



	higher dimensions. One way to reduce the dimension (and get orthogonal variables) is to use Principal Components Analysis to transform your data.	
	○ False	
	Question 3 0 / 2	2 pts
	(3) True/False: Common factors estimated using maximum likelihood estimation with a PROMAX rotation are orthogonal.	
'ou Answered	True  False – The PROMAX rotation is an oblique rotation, and hence the rotated common factors will be correlated with each other.	
orrect Answer	○ False	
	Question 4 0 / 2	2 pts
	(4) True/False: Common factors estimated using Iterated Principal Factors Analysis with a VARIMAX rotation are orthogonal.	tor
orrect Answer	O True	
ou Answered	• False	

True – Cluster analysis is better performed in lower dimensions than

True – The VARIMAX rotation is an orthogonal rotation, and hence the rotated common factors will be orthogonal to each other.

Question 5 2 / 2 pts

(5) True/False: In cluster analysis the choice of similarity measure will affect the cluster assignments.

Correct!

True

True – The most common similarity measure is Euclidean distance. Other distance measures, or metrics, will yield different results. Some measures are more preferred over other metrics given the type of data or other data properties.

False

Question 6 2 / 2 pts

(6) True/False: When computing principal components the data should be standardized, i.e. the data should be centered and scaled to a (0,1) distribution.

Correct!

• True

True – Since principal components analysis aims to explain the variance in the data, all of the variables should be on the same scale. If the variables are not on the same scale, then PCA will consider the variables with the larger scale to be more important.

	Question 7	2 / 2 pts
	(7) True/False: Cluster analysis can only be performed variables.	ed on continuous
	○ True	
orrect!	False – Cluster analysis can be performed on discrete correct similarity measure must be used.	e variables, but the

False

Question 8

(8) True/False: Hierarchical clustering requires that the number of clusters be specified in advance.

True

False

False — Hierarchical clustering techniques fall into either: (1) agglomerative methods or (2) divisive methods. Both subdivisions provide multiple partitions of the data that can be visualized through a dendrogram.

	Question 9	2 / 2 pts
	(9) True/False: Factor Analysis and Principal Components Analysis the same objective of modeling the correlation structure in multivar	
	○ True	
Correct!	False  False – Factor Analysis is designed to explain the correlations betw set of multivariate data while Principal Components Analysis is desi to explain the variance in a set of multivariate data.	

	Question 10	2 / 2 pts
	(10) True/False: Since cluster analysis is an unsupervised learning method, two different cluster partitions cannot be compared.	ng
	○ True	
ct!	False  False – Two cluster partitions can be compared using a variety of	

Quiz Score: 16 out of 20