

# Quiz 3

1.  
Which type of graph is more suitable when you want to illustrate the correlation between two variables?

<input type="radio"/>	Line Graph
<input checked="" type="radio"/>	Scatter Plot
<input type="radio"/>	Bar Graph
<input type="radio"/>	Tree Diagram

2.  
Which type of graph is more suitable when the focus of the graph is to compare size/strength of the segments to the total of each group?

<input type="radio"/>	Scatter Plot
<input checked="" type="radio"/>	Stacked Bar Graph
<input type="radio"/>	Bar Graph
<input type="radio"/>	Tree Diagram

3.  
Which statement is NOT correct about Graphs and Charts?

<input type="radio"/>	Both rely on a repeated pattern to show data
<input checked="" type="radio"/>	Charts are always restricted to numerical axes.
<input type="radio"/>	Graphs must have at least one numerical axe
<input type="radio"/>	They cannot be used interchangeably.

4.  
Which of the followings is correct about PCA?

<input type="radio"/>	PCA cannot be used in the field of Feature Selection. This application of PCA is well known for ineffective.
<input checked="" type="radio"/>	Data visualization: To take 3D data, and find a different way of plotting it in 2D (using $k=2$ )
<input type="radio"/>	As a replacement for (or alternative to) linear regression: For most learning applications, PCA and linear regression give substantially similar results
<input type="radio"/>	Data compression: Reduce the dimension of your data, so that it takes up less memory/disk space. You must do this when processing your data.

5.

**Given  $d$ -dimensional data  $X$ , you run principle component analysis and pick  $P$  principle components. Can you always reconstruct any data point  $x_i$  for  $i \in \{1 \dots N\}$  from the  $P$  principle components with zero reconstruction error?**

<input type="radio"/>	Yes, if $P < d$
<input checked="" type="radio"/>	Yes, if $P = d$
<input type="radio"/>	No, you cannot
<input type="radio"/>	Yes, if $P > d$