

Covariance, correlation and multidimensional Vector Spaces

Quiz, 8 questions



Congratulations! You passed!

Next Item



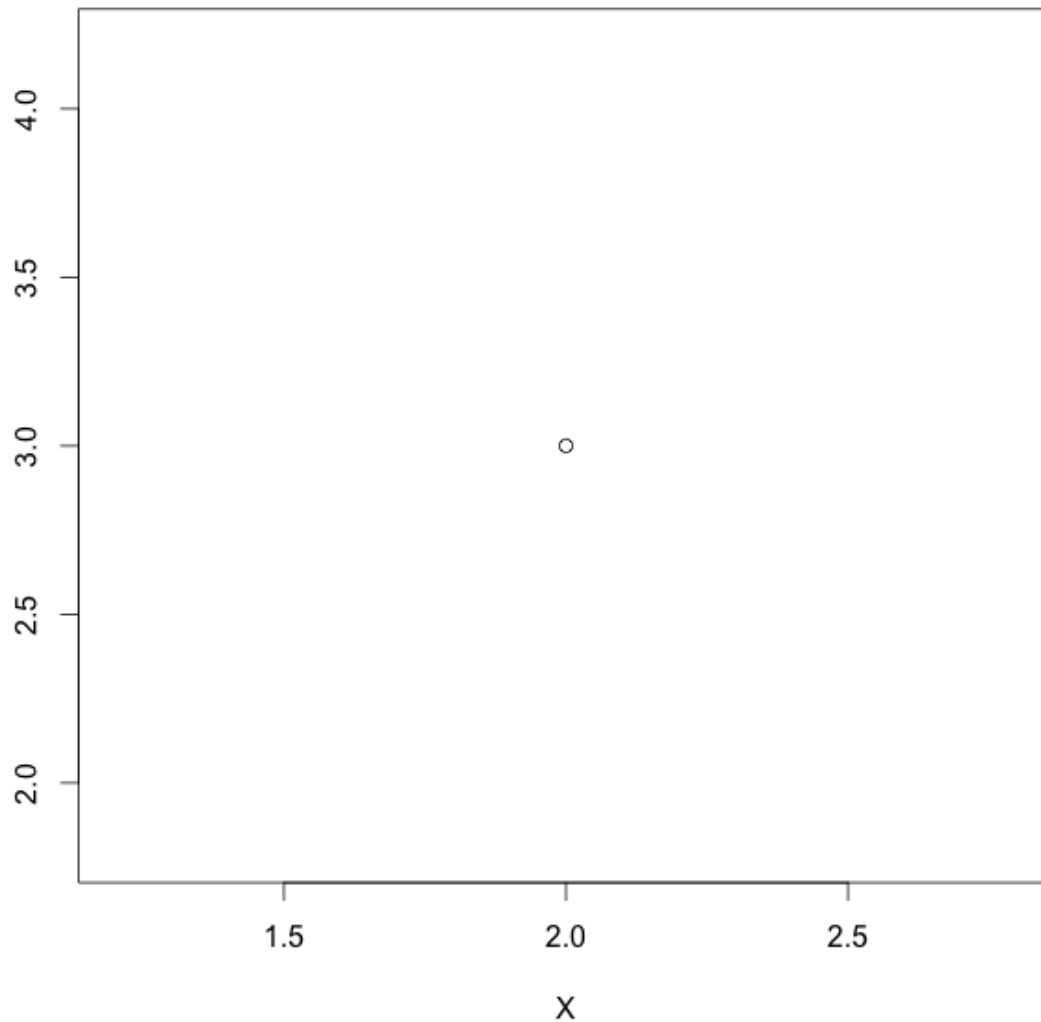
1 / 1
point

1.

What is the coordinate of this data point in vector notation?

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☒ (2,3)



Correct

Correct

☐ [2,3]

☐ (3,2)



 $x=2; y=3$

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1 / 1
point

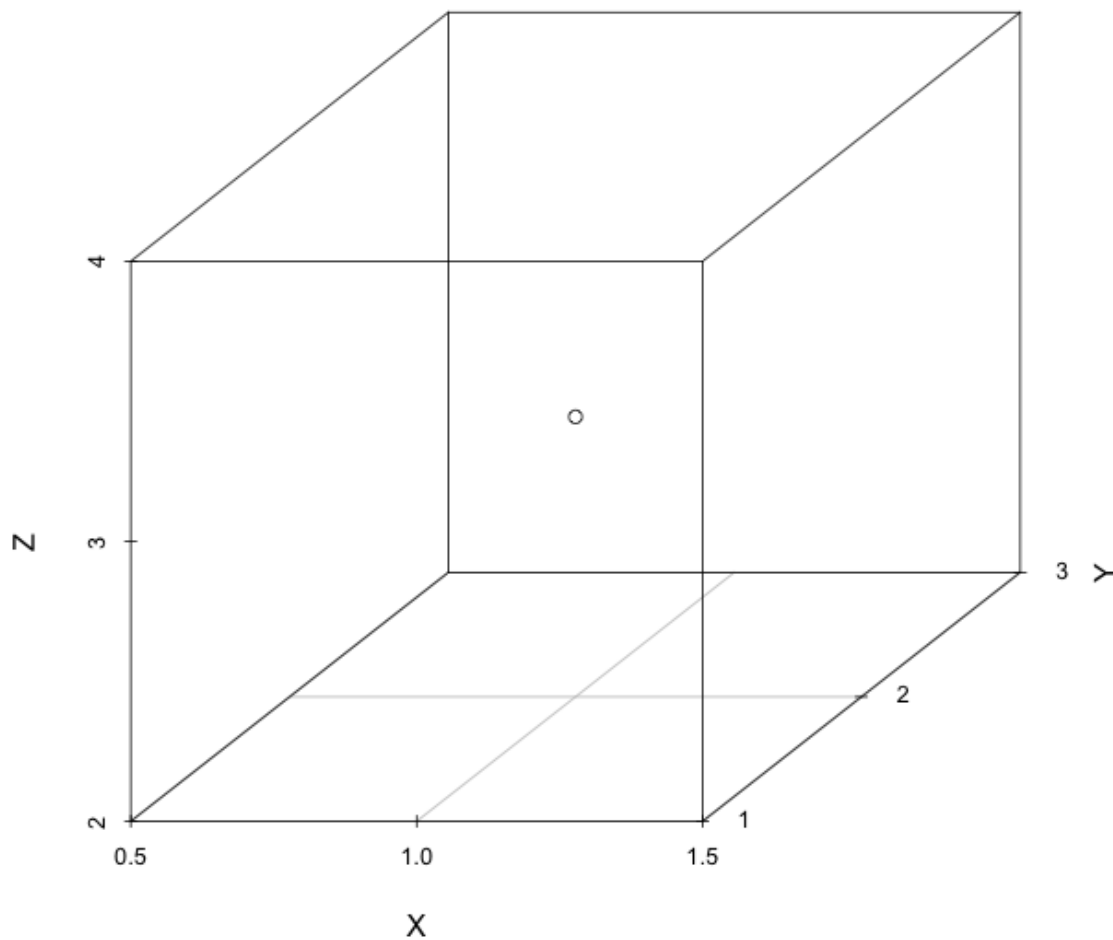
2.

What is the coordinate of this data point in vector notation?

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Note: The point is in the center of the cube, only the coordinate system changed. An X,Y,Z coordinate in vector notation looks like this: (X,Y,Z)

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☐ (3,1,2)

☐ (3,2,1)

☒ (1,2,3)

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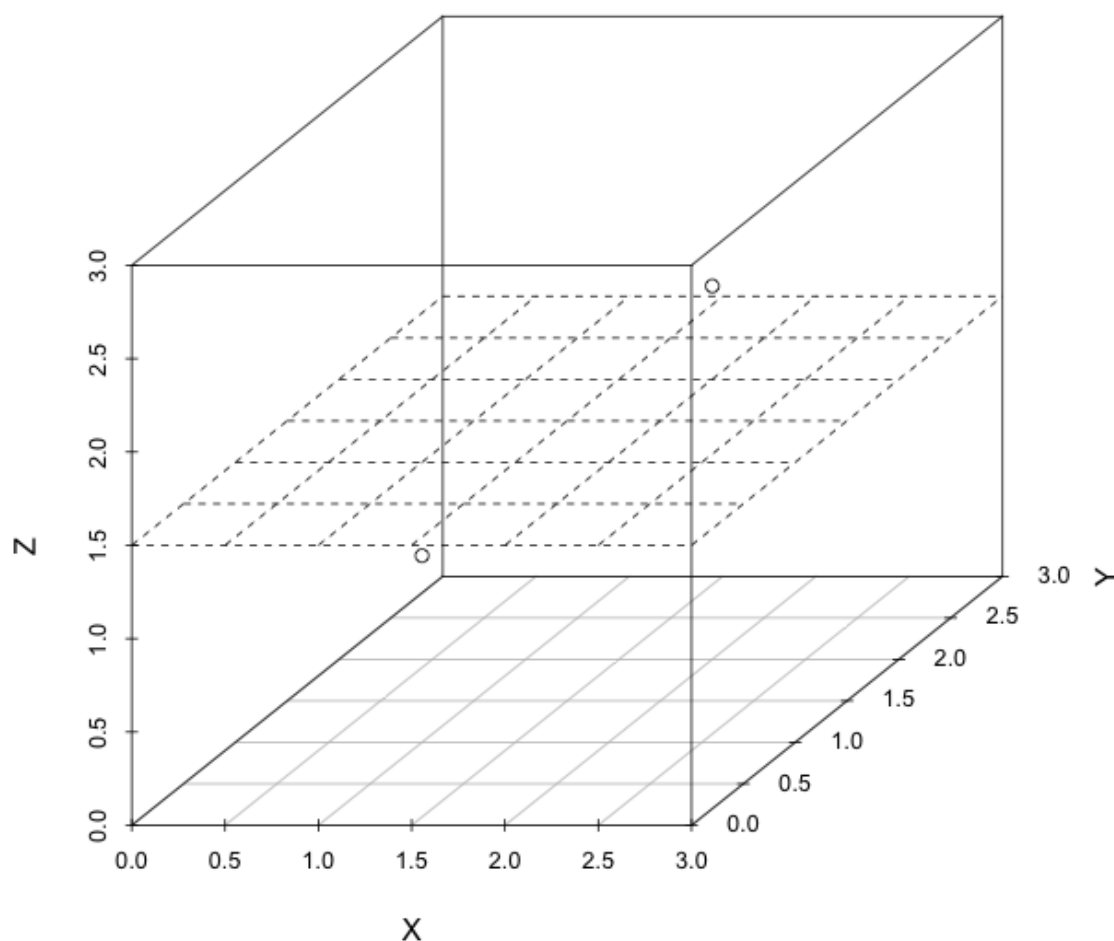
(2,1,3)

0.83 / 1
point

3.

Consider the following plot with two data points and a plane separating those points. This is a process which is called
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Which of the following vectors are lying on the plane of separation and are therefore hard to classify?

Remember: We are using vector notation of (X,Y,Z)

☒ (2.5,1.5,1.5)



Correct

Correct

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Un-selected is correct



(1.5,2,3)

Correct

Correct



(1,2,1.5)

This should be selected



(0,0,0)

Un-selected is correct



(2,1.5,3)

Un-selected is correct

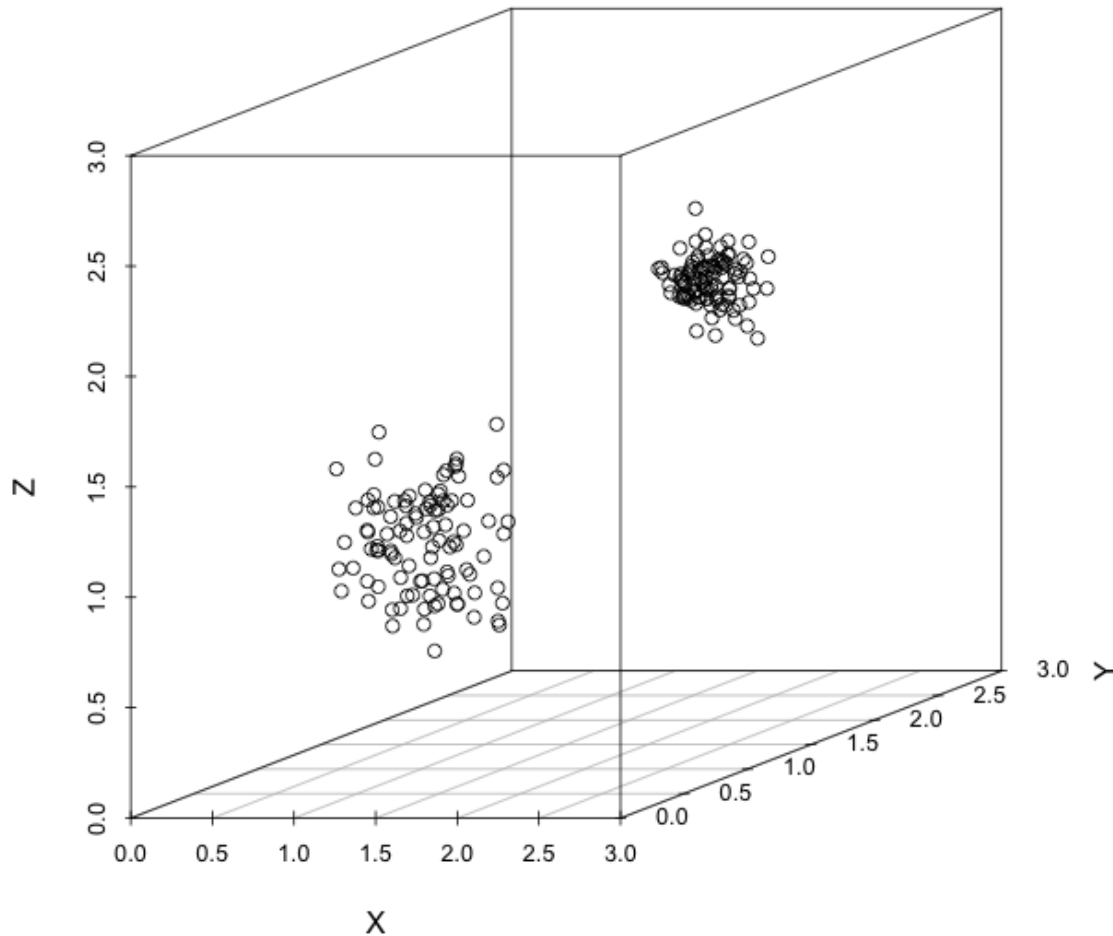
0.57 / 1
point

4.

Given the following plot you can clearly see that there are two clusters.

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Please select the correct answers regarding properties about these data

Remember: We are using vector notation of (X,Y,Z)



Data point (2.5,2.5,2.5) lies within a cluster



This should not be selected

Incorrect, this vector is far off any cluster.

Please revisit Video "Multidimensional vector spaces"

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This should be selected



There is one cluster centroid at (1,1,1)

Correct

Correct



There is one cluster centroid at (2,2,2)

Correct

Correct



There is one cluster centroid at (1,2,1)

Un-selected is correct



There is one cluster centroid at (1,2,2)

Un-selected is correct



Data point (1.5,1.5,1.5) lies within a cluster

This should be selected



1 / 1
point

5.

What is the correlation between the two lists?

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1,2,3,4,5,6,7,8,9,10
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7,6,5,4,5,6,7,8,9,10

Please enter at least three digits after the decimal

0.709

Correct Response

Correct



1 / 1
point

6.

What is the covariance between the two lists?

1,2,3,4,5,6,7,8,9,10

7,6,5,4,5,6,7,8,9,10

Please enter at least three digits after the decimal

3.65

Correct Response

Correct



1 / 1
point

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The correlation between the following two lists is zero, can you explain why?

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1,2,3,4,5,6,7

7,6,5,4,5,6,7



Correlation of 1st half of the list is negative and between the last half of the list is positive so they cancel out



Correct

Correct



The second list is totally random in respect to the first list, therefore they don't correlate at all

0.80 / 1
point

8.

Please select all data with potentially high correlation



Age of driver + Number of accidents



Un-selected is correct



Color of car + Speed of car



Un-selected is correct



Crop fitness + Amount of water available



Correct

Correct



Outside temperature + Power consumption of AC



Correct

Correct

Season of Year+Amount of Rain

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This should be selected

