

Covariance, correlation and multidimensional Vector Spaces

Quiz, 8 questions

✓ **Congratulations! You passed!**

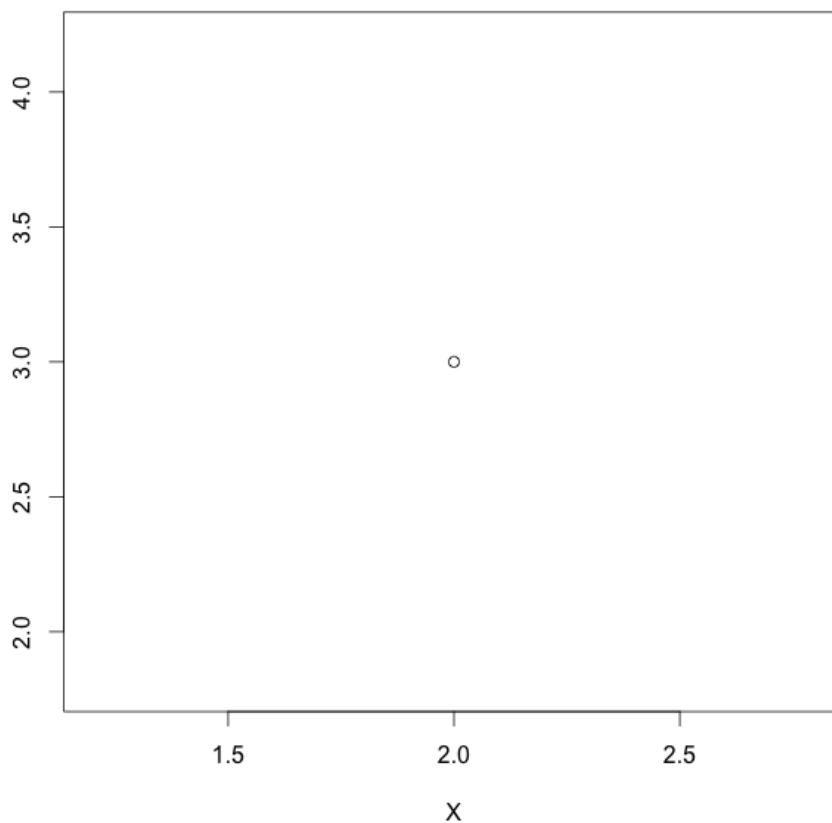
Next Item



1 / 1
points

1.

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



[2,3]





(3,2)

Covariance, correlation and multidimensional Vector Spaces

Quiz, 8 questions

Correct

Correct

 $x=2; y=3$ 1 / 1
points

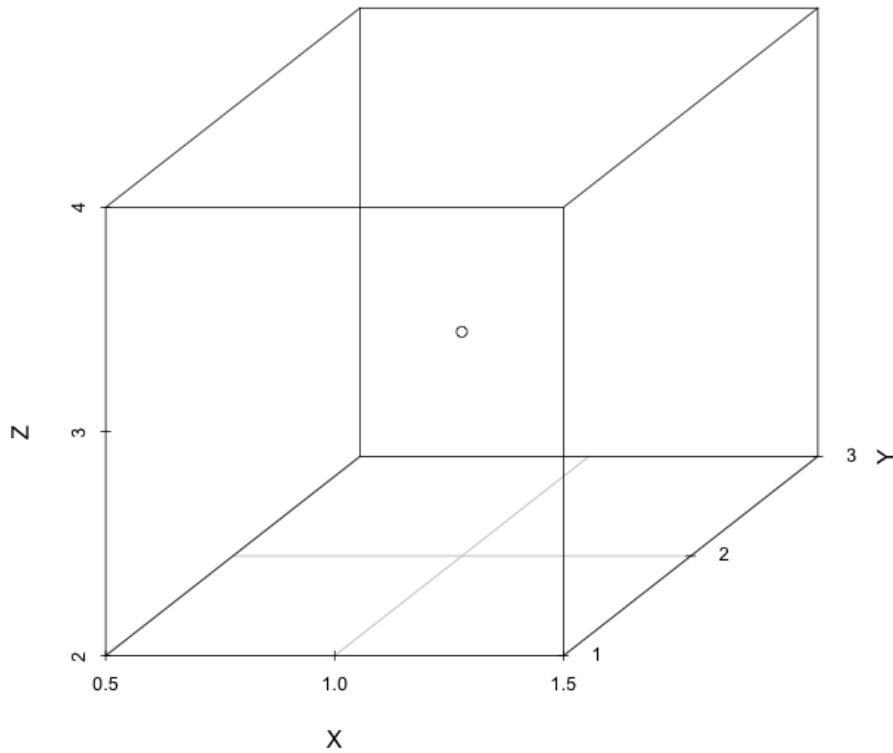
2.

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

Covariance, correlation and multidimensional Vector Spaces

Quiz, 8 questions

Note: the points are the center of the cube, so the coordinate system changed. An X,Y,Z coordinate in vector notation looks like this: (X,Y,Z)



- ☐ (3,1,2)
- ☐ (3,2,1)
- ☐ (2,1,3)
- ☒ (1,2,3)

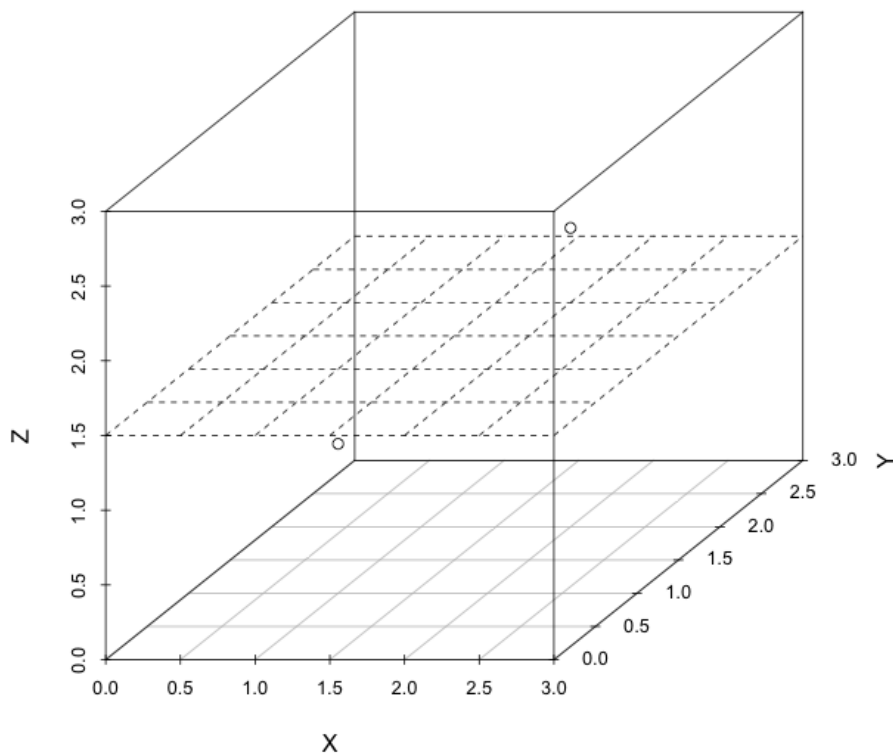
Correct
Correct

Covariance, correlation and multidimensional Vector Spaces

Quiz, 8 questions

3.

Consider the following plot with two data points and a plane separating those points. This is a process which is called binary classification which will be covered in the next course.



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)

☒ (1,2,1.5)

Correct
Correct

☐ (0,0,0)

Covariance, correlation and multidimensional Vector Spaces

Quiz, 8 questions



(2,1.5,3)

Un-selected is correct



(2.5,1.5,1.5)

Correct

Correct



(1.5,2,3)

Un-selected is correct



(1.5,1.5,1.5)

Correct

Correct

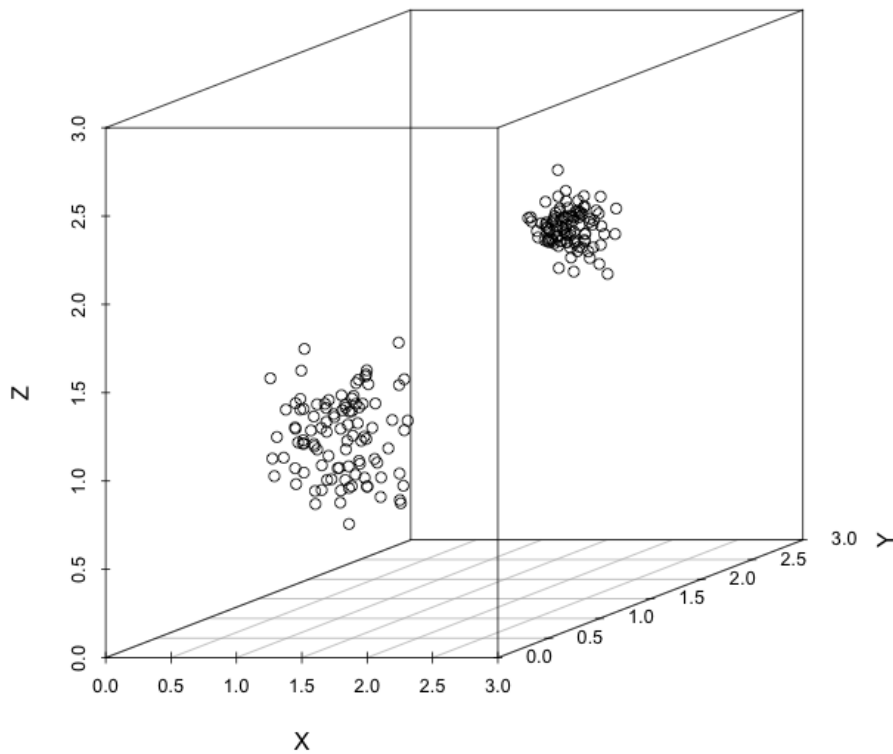
0.57 / 1
points

4.

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

Covariance, correlation and multidimensional Vector Spaces

Quiz, 8 questions



Please select the correct answers regarding properties about these data

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

☐

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



This should not be selected

Incorrect, this vector is far off any cluster.

Please revisit Video "Multidimensional vector spaces"

☐

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"

Covariance, correlation and multidimensional Vector Spaces

Quiz, 8 questions

Correct
Correct

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

This should not be selected
Incorrect, this vecor is far off any cluster.

Please revisit Video "Multidimensional vector spaces"

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

Correct
Correct

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

Correct
Correct

☒ Data point (2.1,1.9,2.2) lies within a cluster

Correct
Correct

 1 / 1
points

5.

What is the correlation between the two lists?

Covariance, correlation and multidimensional Vector Spaces

Quiz, 8 questions

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

0.709



Correct Response

Correct



1 / 1
points

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

4.056



Correct Response

Correct