

# K-Nearest Neighbor

Started: Nov 2 at 6:43pm

## Quiz Instructions

You can have multiple attempt on this quiz to improve your score. Only the highest score will be recorded.



Question 1 10 pts

k-NN algorithm does more computation on test time rather than train time.



True

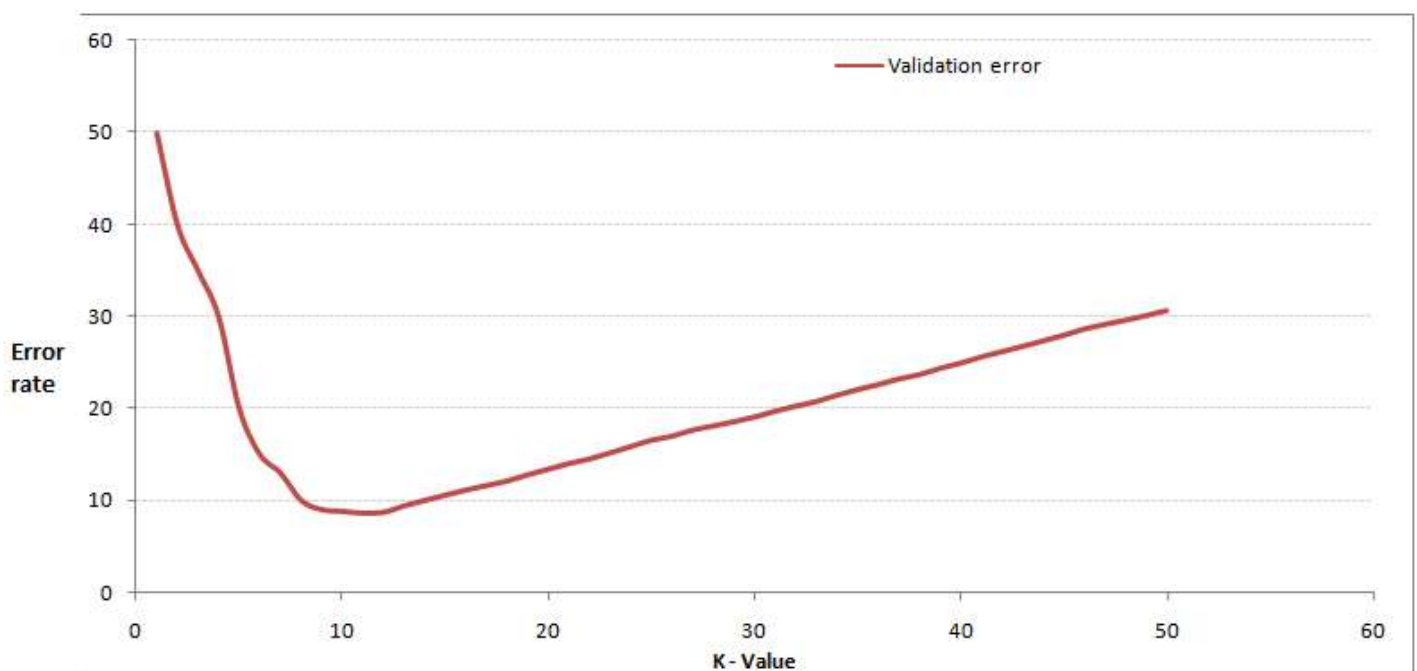


False



Question 2 10 pts

In the image below, which would be the best value for k assuming that the algorithm you are using is k-Nearest Neighbor.



20



1



10

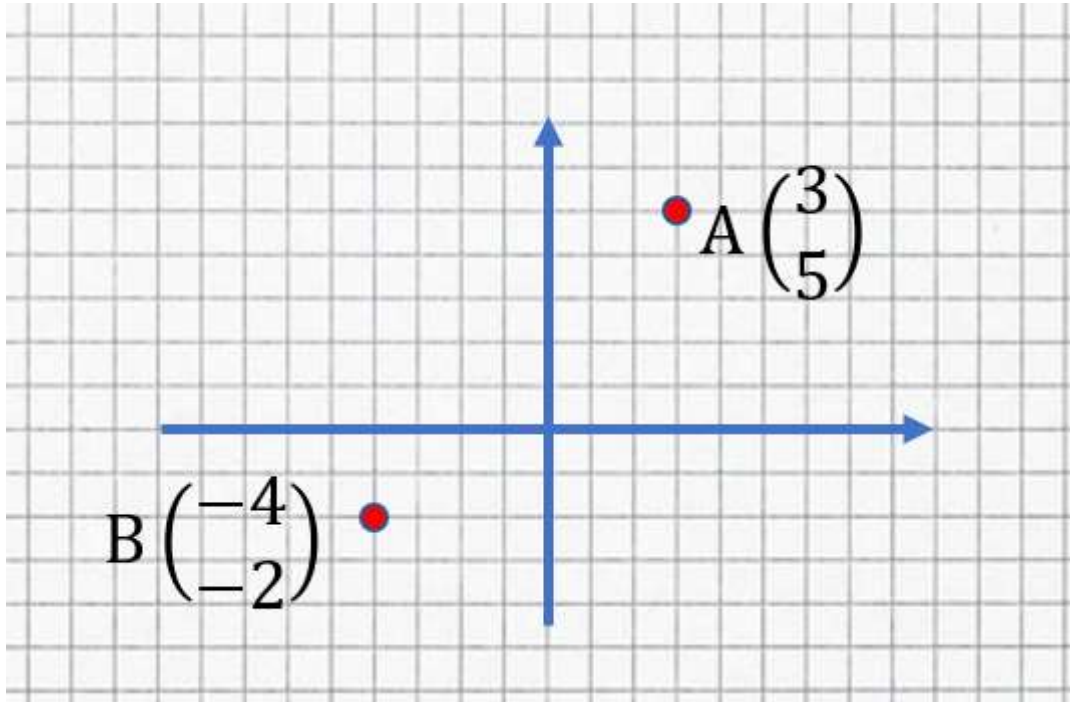


50



Question 3 10 pts

What is the Manhattan distance between cartesian point A(3, 5) and B(-4,-2)?



20



10



14

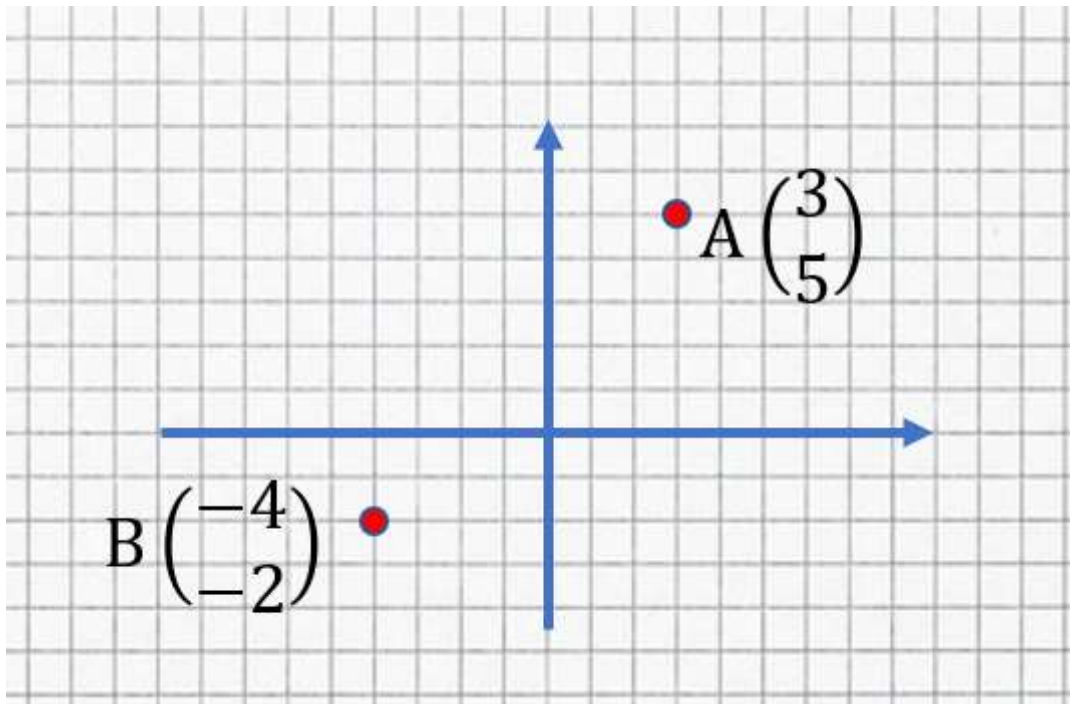


15



Question 4 10 pts

What is the Euclidean distance between cartesian point A(3, 5) and B(-4,-2)?


☒
 $7\sqrt{2}$ 
☐

14

☐
 $7\sqrt{3}$ 
☐

10

☐

Question 5 10 pts

Which of the following distances can be used as a metric in KNN method?

☐

Hamming distance

☒

all of the above

☐

Manhattan distance

☐

Euclidean distance

☐

Question 6 10 pts

check all the statements which are true for the KNN method.

☒

KNN has high bias for larger K values

☒

KNN learns more about the nature of the training data if we use a larger training set.



Euclidean distances is the only distance metric which is being used in KNN.



KNN can be applied to both classification and regression problems



### Question 7 10 pts

Which of the following will be true about k in KNN in terms of variance?



None of these



it depends.



When you increase the k the variance increases.



When you decrease the k the variance will increase.



### Question 8 10 pts

Unlike most machine learning algorithm, KNN works worse if all the features have the same scale.



True

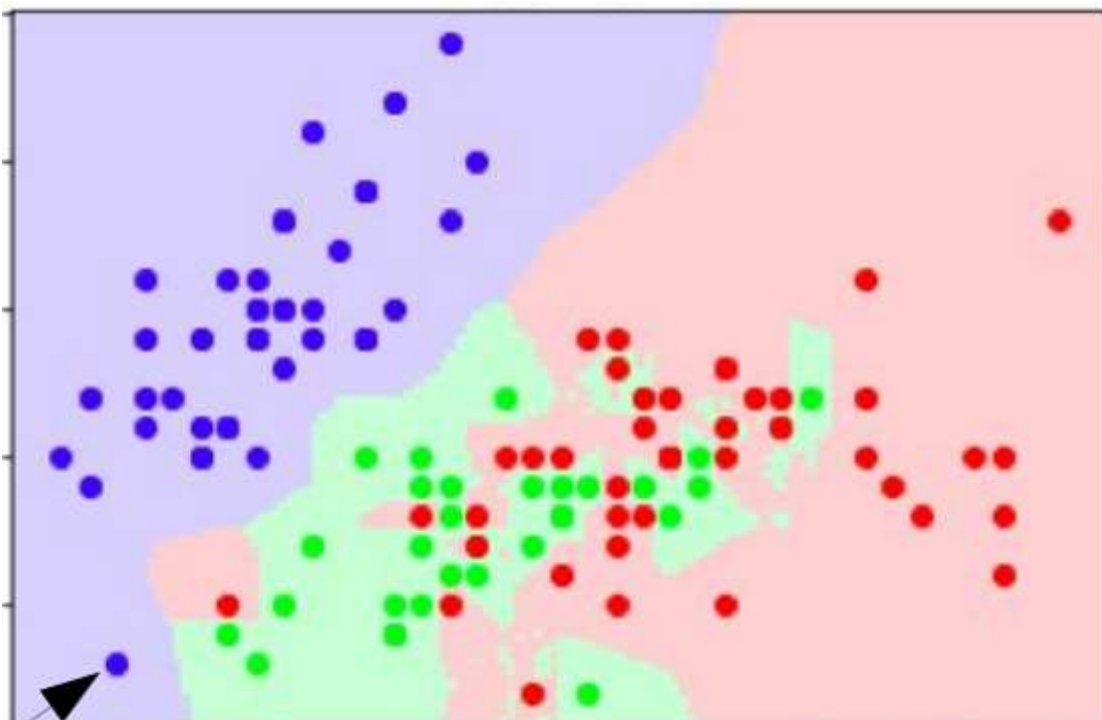


False



### Question 9 10 pts

What can you say about the following classification problem if it was done with KNN method?



☐

It should have a high bias against the training data.

☒

It would have high level of error against new set of data.

☒

Its K should be very small because the complexity of the decision boundaries is high.

☒

The decision boundary is not piece-wise linear.



Question 10 10 pts

What is the Hamming distance between the binary code '0011001' and '0100110'

☐

5

☐

2

☐

3

☒

6

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Quiz saved at 6:53pm

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