CS 422 Quiz 3 Name _____

1. Name **two** ways in which K-NN and K-Means are similar and **two** ways in which they differ. (4 points)

2. Given the training data in table 1, for what value of K would K-NN classify the following test point as 1? $t = (-1, 0)$. For what value of K would K-NN classify the test point as -1? (2 points)

x_1	x_2	label
0	0	-1
0	1	1
1	0	1
1	1	1

Table 1: Training data.

3. What value of K would be overfitting and what value would be underfitting for K-NN and K-Means respectively? Briefly explain. (4 points)

CS 622 Quiz 3 Name _____

1. True/False. There is no possibility of a tie in K-NN when K is odd. Briefly explain. (2 points)

2. Given the training data in table 2, what value of K would you choose for K-NN? Justify your choice. (3 points).

x_1	x_2	label
0	0	-1
0	1	1
1	0	1
1	1	1

Table 2: Training data.

3. Name **two** ways in which K-NN and K-Means are similar and **three** ways in which they differ. (5 points)