CS 422 Quiz 3 Name _____

1. Given the training data below, how would 3-NN classify the sample (1,1)? What about 7-NN? (4 points)

Sample	x_1	x_2	label
s_1	-1	1	-1
s_2	0	1	1
s_3	0	2	-1
s_4	1	-1	-1
s_5	1	0	1
s_6	1	2	1
s_7	2	2	-1
s_8	2	3	1

2. When you find noise in data which of the following options would you consider in K-NN? Explain. (3 points)

   (a) Increase the value of K.

   (b) Decrease the value of K.

   (c) Noise has no effect on my choice of K.

   (d) None of the above.

3. True/False: The computational complexity of K-NN for classifying new samples grows linearly with the number of samples in the training dataset in the worst-case scenario. Explain. (3 points)

CS 622 Quiz 3 Name _____

1. Given the training data below, how would K-NN classify the following sample: (3,7)? Assume K=3. (2 points)

Sample	x_1	x_2	label
s_1	7	7	-1
s_2	7	4	-1
s_3	3	4	1
s_4	1	4	1

2. True/False: K-NN can be used to solve regression problems (predict real values). Explain. (3 points)

3. When you find noise in data which of the following options would you consider in K-NN? Explain. (3 points)

   (a) Increase the value of K.

   (b) Decrease the value of K.

   (c) Noise has no effect on my choice of K.

   (d) None of the above.

4. True/False: K-NN is immediately adapts as we collect new training data. Explain. (2 points)