Name:_____

PID:_____

Quiz [1 point] – Extra Credit on Mid-Term Exam

Thinking about unsupervised learning and the k-Means and expectation maximization (EM) algorithms, which one of the following statements is true:

(a) K-Means algorithm fits clusters only in hyperspheres and EM algorithm fits data only in hyperelipsoids

(b) K-Means using euclidean distance is a particular case of the EM-algorithm when we are fitting K-gaussian distributions with the same variance for each attribute.

(c) EM algorithm has the same computational cost no matter the number of parameters that have to be estimated for the probability distribution that we are fitting to the attributes.

(d) K-Means assigns a probability to the membership of each example to each cluster

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Thinking about the naive bayes algorithm and bayesian networks, which ones of the following statements are true (multiple choice):

(a) Naive Bayes is a probabilistic method that assumes that the statistical distribution of the examples is independent

(b) Naive Bayes is a particular case of a Bayesian Network where all the attributes are assumed to be independent and that their individual distributions are not independent of the class attribute

(c) A Bayesian Network represents the joint probability distribution of a set of variables

(d) Bayesian Networks are unsupervised methods and can not be used for classification