Mid Term 1:

True/False:

1. To solve the classification problem, the learning algorithm is asked to output a function f: R^n -> R **(False)**
2. Supervised learning is observing several examples of a vector x and a vector y and learning to predict y from x, usually by estimating p(y|x) **(True)**
3. We are interested in how well the machine learning algorithm performs on data that it has seen before, this determines how well it will work when deployed in the real world. **(False)**
4. When the gap between the training error and test error is too large, it is called underfitting. **(False)**
5. In the polynomial regression model, σ𝑖=1 𝑑 𝑤𝑖𝑥 𝑖 the degree of the polynomial 𝑑 is a hyperparameter. **(True)**
6. The Loss function used by a machine learning algorithm often decomposes as a sum over training examples of some per-example cost function. **(True)**
7. Exclusive OR (XOR) problem can never be solved optimally with Logistic Regression. **(True)**
8. In practice, ReLU (𝑔(𝑧) = max{( 0, 𝑧)} is Invalid for a gradient based learning algorithm, Not differentiable at 𝑧 = 0. **(False) Verify**
9. Starting from any initial parameters, it is guaranteed that a convex optimization converges. **(False) verify**
10. A neural network with a single hidden layer is sufficient to represent any continuous function on a closed and bounded subset of R^n. **(True)**
11. The error incurred by an ideal model is called the Bayes error. **(True)**

Mid -2

6)

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Write Answers for this questions.