Comprehension Questions for Lectures 1 – 3

1. How Can Linear Regression be modified to fit nonlinear curves? (Recall that the equation for Linear Regression for two dimensions is $y = \theta_0 + \theta_1 x$).
2. How Can Logistic Regression be modified to fit nonlinear decision boundaries? (Recall that the equation for Logistic Regression with two features is $y = 1/1+e^{-z}$ where $z = \theta_0 + \theta_1 x^{(1)} + \theta_2 x^{(2)}$).
3. Can the modifies regression algorithm in #1 fit closed curves (e.g. an ellipse) to the data?
4. Can the modifies regression algorithm in #1 fit closed decision boundaries (e.g. an ellipse) to the data?
5. What is feature extraction?
6. What are the problems with training Logistic Regression on the MNIST dataset?
7. Why do we use ReLU activation units instead of Linear activation units for the hidden layers?