Instructions: Make sure your questions and answers are on different pages. Do not include your name or any other identifying information. I will know that information from Canvas.

Question 1: Why is it important to separate and compare the loss functions across these categories of machine and deep learning?

Question 2: Why does the “Loss Functions in Unsupervised Learning” section not have a comparison between the four loss functions at the end of the section?

Question 3: How does object recognition differ from facial recognition?

Answer Question 1: Since not only do machine and deep learning have some differences, all the different types within them have differences as well. That makes certain loss functions more effective or only useable in certain cases, and can't be compared against each other. For instance, classification and regression are fairly different cases, so the loss functions used are different.

Answer Question 2: Due to how unsupervised learning works, in this case, K means, there isn't a "right answer" to compare the clusters formed against. Instead, they can only be listed and described against each other, as each loss function measures different aspects of the clusters (similarity, distance, dimension reduction, and separability)

Answer Question 3: Object detection involves finding one thing from within an image, from a set of candidate boxes. This is similar to a regression problem. Facial recognition instead has to compare one whole face to others, where each person is considered one class, and must match images to a class. This is similar to a classification problem, but more complex.