Overview of ML

a. define ML in your own words
Machine Learning teaches computers to recognize patterns by providing them with data that over time improves its accuracy.

b. in a paragraph, summarise the importance of data, pattern recognition, and accuracy in machine learning
Data is important because it's what's used to train computers to recognize patterns gradually. As more data is provided the computer becomes more accurate. Pattern recognition is important because it is important for the machine to recognize similarities in the data in order to accurately know what to do in a situation. Accuracy is important because the result should be correct and if a machine makes mistakes it could lead to a problem.

c. describe the relationship between AI and ML
Machine Learning is a subset and application of Artificial Intelligence. Artificial Intelligence is a computer system that thinks like a human such as learning while machine learning is how a computer becomes intelligent.

d. list at least 2 examples of modern machine learning applications, and explain why these applications could not be built with traditional programming
One example is facial recognition because it's hard to write rules to decide who is who, so instead the computer is fed images to identify similar characteristics in a person's face. Another example is autonomous vehicles because every situation that a vehicle may come across is different and can't be written in a program. For this reason, they use cameras and sensors to decide what decision to make.

e. In a paragraph, define the terms observation, feature, quantitative data, and qualitative data and discuss their importance in machine learning
Each row is a sample data point called an observation. Each column in a table is called a feature, it is an input variable that can be used for analysis including name, GPA, and age. Quantitative data is numeric for example GPA, and SAT scores. This is important because it provides statistical data for the machine to learn, and predict consumer behavior. Qualitative data is also called categorical data or factors and describes characteristics. Examples include images and recordings. The importance is that it helps identify errors, and is useful for facial, and speech recognition.

f. write a paragraph describing your personal interest in ML and whether/how you would like to learn more about ML for personal projects and/or professional application
I'm interested in Machine Learning and how it can help the environment. I watched a video about this a year ago and have been interested since then. For example, machine learning can help detection of oil spills, predict sea level rise, conservation of endangered species, and many more. I would like to learn for future projects by watching videos on the related topic and talking with people already in the area of work.