**Chapter 1**

**What is ML?**

The class of algorithms which enable a machine to learn to do a task without being explicitly programmed to do so.

**Can you name four types of problems where it shines?**

1. Recommendation systems on YouTube, Amazon
2. Facial recognition
3. Spam filtering
4. Stock prediction

**What is a labeled training set?**

A data set with labeled examples.

**What are the two most common supervised tasks?**

Facial recognition and Spam detection

**Can you name four common unsupervised tasks?**

1. Speech recognition
2. Image boundary detection
3. Clustering to detect coincidence
4. Anomaly detection

**What type of Machine Learning algorithm would you use to allow a robot to walk in various unknown terrains?**

Reinforcement Learning

**What type of algorithm would you use to segment your customers into multiple groups?**

Classification Algorithm, can be supervised as well as unsupervised based on approach.

**Would you frame the problem of spam detection as a supervised learning problem or an unsupervised learning problem?**

It can be framed either ways.

**How?**

1. Supervised Approach: The algorithm learns from how the user marks the emails as spam or not spam. You categorise new algorithms based on the spam folder contents as training data.
2. Unsupervised Approach: Anomaly detection

**What is an online learning system?**

An online learning system learns incrementally from the new data while it is being tested or used.

**What is out-of-core learning?**

Out-of-core learning uses the data that is too big to fit in your RAM. It uses additional storage like secondary memory or web repositories.

**What type of learning algorithm relies on a similarity measure to make predictions?**

Unsupervised algorithm – clustering