Feedback — I. Introduction

You submitted this quiz on **Sat 28 Jun 2014 3:44 PM PDT**. You got a score of **5.00** out of **5.00**.

Question 1

A computer program is said to learn from experience E with respect to some task T and some performance measure P if its performance on T, as measured by P, improves with experience E. Suppose we feed a learning algorithm a lot of historical weather data, and have it learn to predict weather. In this setting, what is T?

Your Answer		Score	Explanation
○ None of these.			
○ The probability of it correctly predicting a future date's weather.			
○ The process of the algorithm examining a large amount of historical weather data.			
◉ The weather prediction task.	✔	1.00	The task described is weather prediction, so this is Task T.
Total		1.00 / 1.00	

Question 2

Suppose you are working on weather prediction, and use a learning algorithm to predict tomorrow's temperature (in degrees Centigrade/Fahrenheit). Would you treat this as a classification or a regression problem?

Your	Score	Explanation

Answer

◯

Classification

◉   ✔   1.00   Regression is appropriate when we are trying to predict a

Regression   continuous-valued output, such as the temperature.

Total   1.00 /
                              1.00

Question 3

Suppose you are working on stock market prediction. You would like to predict whether the US
Dollar will go up against the Euro tomorrow (i.e., whether a dollar will be worth more euros
tomorrow than it is worth today). Would you treat this as a classification or a regression problem?

Your Answer		**Score**	**Explanation**
◉ Classification	✔	1.00	Classification is appropriate when we are trying to predict one of a small number of discrete-valued outputs. Here, there are two possible outcomes: That the US Dollar goes up (which we might designate as class 0, say) or that it does not (class 1).
◯ Regression			
Total		1.00 / 1.00	

Question 4

Some of the problems below are best addressed using a supervised learning algorithm, and the
others with an unsupervised learning algorithm. Which of the following would you apply
supervised learning to? (Select all that apply.) In each case, assume some appropriate dataset is
available for your algorithm to learn from.

Your Answer	Score	Explanation
☑ Given historical data of childrens' ages and heights, predict children's height as a function of their age.	✔ 0.25	This is a supervised learning, regression problem, where we can learn from a training set to predict height.
☐ Examine a large collection of emails that are known to be spam email, to discover if there are sub-types of spam mail.	✔ 0.25	This can addressed using a clustering (unsupervised learning) algorithm, to cluster spam mail into sub-types.
☑ Given genetic (DNA) data from a person, predict the odds of him/her developing diabetes over the next 10 years.	✔ 0.25	This can be addressed as a supervised learning, classification, problem, where we can learn from a labeled dataset comprising different people's genetic data, and labels telling us if they had developed diabetes.
☐ Given data on how 1000 medical patients respond to an experimental drug (such as effectiveness of the treatment, side effects, etc.), discover whether there are different categories or "types" of patients in terms of how they respond to the drug, and if so what these categories are.	✔ 0.25	This can be addressed using an unsupervised learning, clustering, algorithm, in which we group the 1000 patients into different clusters based on their responses to the drug.
Total	1.00 / 1.00	

Question 5

Which of these is a reasonable definition of machine learning?

Your Answer		Score	Explanation
⊙ Machine learning is the science of programming computers.			
⊙ Machine learning means from labeled data.			
⦿ Machine learning is the field of study that gives computers the ability to learn without being explicitly programmed.	✔	1.00	This was the definition given by Arthur Samuel (who had written the famous checkers playing, learning program).
⊙ Machine learning is the field of allowing robots to act intelligently.			
Total		1.00 / 1.00	