

# Feedback — I. Introduction

You submitted this quiz on **Fri 3 May 2013 11:27 AM PDT -0700**. 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
<input type="radio"/> The probability of it correctly predicting a future date's weather.		
<input checked="" type="radio"/> The weather prediction task.	✓ 1.00	The task described is weather prediction, so this is Task $T$ .
<input type="radio"/> The process of the algorithm examining a large amount of historical weather data.		
<input type="radio"/> None of these.		
Total	1.00 / 1.00	

## Question 2

Suppose you are working on weather prediction, and you would like to predict whether or not it will be raining at 5pm tomorrow. You want to use a learning algorithm for this. Would you treat this as a classification or a regression problem?

Your Answer	Score	Explanation
<input checked="" type="radio"/> Classification	✓ 1.00	Classification is appropriate when we are trying to predict one of a small number of discrete-valued outputs, such as whether it will rain (which we might designate as class 0), or not (say class 1).
<input type="radio"/> Regression		
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
<input checked="" type="radio"/> 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).
<input type="radio"/> 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
<input type="checkbox"/> 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 be addressed using a clustering (unsupervised learning) algorithm, to cluster spam mail into sub-types.
<input checked="" type="checkbox"/> 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.
<input type="checkbox"/> 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.
<input checked="" type="checkbox"/> In farming, given data on crop yields over the last 50 years, learn to predict next year's crop yields.	✓ 0.25	This can be addressed as a supervised learning problem,

where we learn from historical data (labeled with historical crop yields) to predict future crop yields.

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Total	1.00 /
	1.00

## Question 5

Which of these is a reasonable definition of machine learning?

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### Your Answer

### Score

### Explanation

☒ 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 science of programming computers.

☐ Machine learning means from labeled data.

☐ Machine learning is the field of allowing robots to act intelligently.

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Total	1.00 /
	1.00