

## Feedback — Quiz 1

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You submitted this quiz on **Sun 10 May 2015 7:42 AM PDT**. You got a score of **15.00** out of **15.00**.

### Question 1

Which of the following are steps in building a machine learning algorithm?

Your Answer	Score	Explanation
<input type="radio"/> Training and test sets		
<input type="radio"/> Data mining		
<input checked="" type="radio"/> Evaluating the prediction.	✓ 3.00	
<input type="radio"/> Machine learning		
Total	3.00 / 3.00	

### Question 2

Suppose we build a prediction algorithm on a data set and it is 100% accurate on that data set. Why might the algorithm not work well if we collect a new data set?

Your Answer	Score	Explanation
<input type="radio"/> We may be using a bad algorithm that doesn't predict well on this kind of data.		
<input type="radio"/> We have used neural networks which has notoriously bad performance.		
<input checked="" type="radio"/> Our algorithm may be overfitting the training data, predicting both the signal and the noise.	✓ 3.00	
<input type="radio"/> We have too few predictors to get good out of sample accuracy.		

Total

3.00 /  
3.00

### Question 3

What are typical sizes for the training and test sets?

Your Answer	Score	Explanation
<input type="radio"/> 100% training set, 0% test set.		
<input checked="" type="radio"/> 60% in the training set, 40% in the testing set.	✓ 3.00	
<input type="radio"/> 90% training set, 10% test set		
<input type="radio"/> 0% training set, 100% test set.		
Total	3.00 / 3.00	

### Question 4

What are some common error rates for predicting binary variables (i.e. variables with two possible values like yes/no, disease/normal, clicked/didn't click)?

Your Answer	Score	Explanation
<input type="radio"/> Correlation		
<input type="radio"/> Median absolute deviation		
<input type="radio"/> $R^2$		
<input checked="" type="radio"/> Predictive value of a positive	✓ 3.00	
Total	3.00 / 3.00	

### Question 5

Suppose that we have created a machine learning algorithm that predicts whether a link will be clicked with 99% sensitivity and 99% specificity. The rate the link is clicked is 1/1000 of visits to a website. If we predict the link will be clicked on a specific visit, what is the probability it will actually be clicked?

Your Answer	Score	Explanation
<input type="radio"/> 50%		
<input type="radio"/> 99.9%		
<input checked="" type="radio"/> 9%	3.00	✓
<input type="radio"/> 89.9%		
Total	3.00 / 3.00	

