

## COMP9444 Neural Networks and Deep Learning

### Quiz 1 (Perceptron Learning and Backpropagation)

This is an optional quiz to test whether you understand the material from Weeks 1 and 2 of the course.

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1. Explain the difference between Perceptron Learning and Backpropagation.
  2. When training a neural network by backpropagation, what happens if the learning rate is too low? What happens if it is too high?
  3. Explain why rescaling of inputs is sometimes necessary for neural networks.
  4. Explain what is meant by "overfitting" in neural networks, and list three different methods for avoiding it.
  5. What is the difference between batch learning and online learning?
  6. Write the formula for a Gaussian distribution with mean  $\mu$  and standard deviation  $\sigma$ .
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Make sure you try answering the Questions yourself, before checking the [Sample Answers](#)