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CS478 : Brother Christophe

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A. Consider the following simple dataset.

| **A** | **B** | **T** |
| --- | --- | --- |
| 1 | 0 | 1 |
| 0 | 1 | 0 |

T is the (binary) target attribute. Consider a 2-layer feedforward neural network with two input units (one for A and one for B), a single hidden unit, and one output unit (for T). Initialize all weights (there should be 3 of them) to 0.1. Assume a learning rate of 0.3. Using incremental weight updates, show the values of the weights after each of the first three training iterations. Show your results in the form of a table as we did in class.

B. Assume that the units of a neural network are modified so they compute the squashing function tanh (instead of the sigmoid function). What is the resulting backpropagation weight update rule for the output layer? (Note, tanh’(x) = 1 – tanh2(x)).