**Question:**

Use the following data set, initial weights and learning rate to train the given 3-layer NN.

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You will be using batch gradient descent and will assume each layer to be using sigmoid activation functions. Use cross entropy loss as your cost function. You need to run one complete epoch of training and show the progress. More specifically you will show the output of each neuron ( and matrices) after the forward pass, and the contents of all gradient matrices (, and ). Finally show the updated weight matrices ( and ) at the end of 1st epoch. Write your answers to **3 decimal places** e.g. 0.000

**Answer:**

**Forward Pass:**

**Backward Pass:**

**At the end of 1st epoch:**