Name and student ID:

Date:

**Note**: *please remember that laboratory examples and studies are designed for students that regularly* ***visit*** *NAVY lectures. Laboratory staff is for you there to help you with programming and examples collection,* ***but not for teaching of material****s, that is done on lectures!!!*

**Problem definition:**

**Unconventional computation and algorithms**

Laboratory protocol

**Topic**: Artificial neural networks – multilayer ANN with backpropagation

**Lecturer**: prof. Ing. Ivan Zelinka, Ph.D., Department of computer science, FEI VŠB-TU

**Laboratory staff**: Ing. Filip Zatloukal, Ing. Lukas Tomaszek, assoc. prof. Petr Saloun, Department of computer science, FEI VŠB-TU

Create inside your framework for artificial neural networks (ANN) a

1. Multilayer ANN, minimum 2 neurons in 2 learning layers.
2. Create backpropagation learning algorithm.
3. Use XOR problem training set
4. Learn your ANN.
5. Record learning in graph as dependence of global error on epoch.
6. Made a conclusion.

**Nápověda:**

Delta pro výstupní vrstvu … 

Delta pro ostatní skryté vrstvy … 

Změna váhy u vstupní vrstvy … 

Změna váhy u ostatních vrstev … 

Nová váha … 

**Solution design:**

**Results and facts:**

**Conclusion:**