

Problem Set 10<sup>1</sup>

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## Q9

Table 1: Test Performance

Algorithm	Test Accuracy
Logistic regression	0.85
Trees	0.87
Neural network	0.84
kNN	0.84
SVM	–

Table 2: Optimal Tuning Parameters

Algorithm	penalty	cost_complexity	tree_depth/hidden_units	min_n/neighbors
Logistic regression	0.00	–	–	–
Trees	–	0.00	15.00	10.00
Neural network	0.01	–	9.00	–
kNN	–	–	–	29.00
SVM	–	–	–	–

## 1 Performance Comparison Analysis

The test performance results show that the tree algorithm outperforms all other algorithms with a test accuracy of 87%. The logistic regression is the second with 85% test accuracy, kNN and neural network comes with test accuracy of 84%. I didn't get outcome of SVM successfully.

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<sup>1</sup>I use paid version of Claude.ai to help with the problem set