

For Problem 1

- **a)** Regression Problem
- **b)** Classification Problem

For Problem 2

- **a)** The test loss is 0.042
- **b)** The test loss is 0.029, It decreases
- **c)** The test loss is 0.024

For Problem 3

Vector \mathbf{b}

For Problem 4

- Class B
- Class R