9. Übung Mathematische Statistik WS15

1. For the following data

   1.95 2.13 0.74 0.05 2.70 1.84 1.25 1.00 0.70 1.02

   1.71 0.58 0.16 1.12 1.16 0.21 0.70 1.30 1.06 1.75

   test $H_0 : x_{0.5} \leq 0.9$ against $H_1 : x_{0.5} > 0.9$.

2. In problem 1, calculate a 95%-confidence interval for $x_{0.5}$.

3. In problem 1, calculate 95%-confidence intervals for $x_{0.25}$ and $x_{0.75}$.

4. Find the eigenvalues and eigenfunctions of the equation

$$\int_0^1 (\min(s,t) - st)g(s)ds = \lambda g(t),\ 0 \leq t \leq 1.$$

   (This should lead to a better known differential equation than we saw in the lecture).