Outlier Tests

Exercise 8.1

The ammonium nitrogen content of water was measured [µg/l], yielding:

14.27, 13.43, 14.25, 14.83, 14.64, 14.09, 15.19, 12.93, 13.94, 11.20.

The value 11.20 is suspected of being a gross measurement error. At $\alpha = 0.05$, use Grubbs' and Dixon's outlier tests to assess whether it can be retained in the data set. Also perform a graphical outlier check.

Exercise 8.2

During an investigation of dairy cattle, blood-serum glucose concentrations were measured [mmol/l]:

2.9, 3.1, 3.3, 2.8, 3.0, 3.2, 3.1, 4.8, 3.8, 4.0, 3.7.

Determine whether the largest observation is an outlier. Apply Grubbs' and Dixon's outlier tests at $\alpha = 0.01$. Also perform a graphical outlier check.