1.2 Portmanteau tests

Consider a *whole set* of r_k values, and develop a test to see whether the set is significantly different from a zero set.

Ljung-Box test:

$$Q^* = n(n+2)\sum_{k=1}^{h}(n-k)^{-1}r_k^2$$

where h is the maximum lag being considered and n is the number of observations in the series.

- ◇ If each r_k close to zero, Q^* will be **relatively small**.
- ◇ If some r_k values large (positive or negative), Q^* will be **relatively large**.