

A biologist is studying the effect of nutrients on the heights to which plants grow. A random sample of 24 similar young plants is divided into two equal groups  $A$  and  $B$ . The plants in group  $A$  are fed with nutrients and water and the plants in group  $B$  are given only water. After four weeks, the height, in cm, of each plant is measured and the results are as follows.

Group $A$	12.3	11.8	12.1	13.2	11.1	10.6	13.8	12.0	12.2	12.4	13.5	13.9
Group $B$	11.7	10.8	10.9	11.3	11.2	12.6	11.0	10.5	11.9	12.5	10.7	11.6

The biologist decides to carry out a test at the 5% significance level to test whether the nutrients have resulted in an increase in growth.

- (a) She carries out a Wilcoxon rank-sum test. Give a reason why this is an appropriate choice of test. [1]
- (b) Carry out the Wilcoxon rank-sum test for these results. [10]