

A factory produces metal discs. The manager claims that the diameters of these discs have a median of 22.0 mm. The diameters, in mm, of a random sample of 12 discs produced by this factory are as follows.

22.4 20.9 22.8 21.5 23.2 22.9 23.9 21.7 19.8 23.6 22.6 23.0

- (a)** Carry out a Wilcoxon signed-rank test, at the 10% significance level, to test whether there is any evidence against the manager's claim. [7]
- (b)** State an assumption that is necessary for this test to be valid. [1]