

The manager of a technology company  $A$  claims that his employees earn more per year than the employees at technology company  $B$ . The amounts earned per year, in hundreds of dollars, by a random sample of 12 employees from company  $A$  and an independent random sample of 12 employees from company  $B$  are shown below.

Company $A$	461	482	374	512	415	452	502	427	398	545	612	359
Company $B$	454	506	491	384	361	443	401	472	414	342	355	437

- (a)

Carry out a Wilcoxon rank-sum test at the 5% significance level to test whether the manager’s claim is supported by the data.

[9]
- (b)

Explain whether a paired sample  $t$ -test would be appropriate to test the manager’s claim if earnings are normally distributed.

[1]