

Georgio has designed two new uniforms  $X$  and  $Y$  for the employees of an airline company. A random sample of 11 employees are each asked to assess each of the two uniforms for practicality and appearance, and to give a total score out of 100. The scores are given in the table.

Employee	$A$	$B$	$C$	$D$	$E$	$F$	$G$	$H$	$I$	$J$	$K$
Uniform $X$	82	74	42	59	60	73	94	98	62	36	50
Uniform $Y$	78	75	63	56	67	82	99	90	72	48	61

- (a) Give a reason why a Wilcoxon signed-rank test may be more appropriate than a  $t$ -test for investigating whether there is any evidence of a preference for one of the uniforms. [1]
- (b) Carry out a Wilcoxon matched-pairs signed-rank test at the 10% significance level. [7]