Dixon & test

1) * sort the data set

(make sure to have lowest two values and highest two values correctly identified).

* {121, 137 ..... 170, 178}.

16 8

* Suspect 121 may be an outlier.

(actually told this in question, but good to check all the same).

Range = 178 − 121 = 57

gap (for 121) = 16.

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* Hypothesis test

H_0 : no outliers present in ~~DATA~~

H_1 : Lowest value (121) is an outlier

(This is sufficient as statement of H_0, H_1)

Test statistic

$$Q_{Test} = \frac{\text{Gap}}{\text{Range}} = 16/57$$

$$= 0.2807.$$

Critical value

see tables folder in Sulis

Sample size = 14.

	0.05
14	0.396

Decision

is TS > CV?

is 2.807 > 0.396

NO Fail to reject Ho.

not enough evidence to say 121 is an outlier.