1 A student takes readings to measure the mean diameter of a wire using a micrometer screw gauge.

(a) Make suggestions, one in each case, that the student may adopt in order to

(i) reduce a systematic error in the readings,

.....

.....

(ii) allow for a wire of varying diameter along its length,

.....

.....

(iii) allow for a non-circular cross-section of the wire.

.....

.....

[3]

(b) The mean diameter of the wire is found to be 0.50 ± 0.02 mm. Calculate the percentage uncertainty in

(i) the diameter,

uncertainty = ... %

(ii) the area of cross-section of the wire.

uncertainty = ... %

[2]