## Question 4

The diagram shows a semi-circle standing on a diameter [AC], and [BD]  $\perp$  [AC].

(a) (i) Prove that the triangles *ABD* and *DBC* are similar.



(ii) If |AB| = x, |BC| = 1, and |BD| = y, write y in terms of x.

(b) Use your result from part (a)(ii) to construct a line segment equal in length (in centimetres) to the square root of the length of the line segment [TU] which is drawn below.

UТ

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