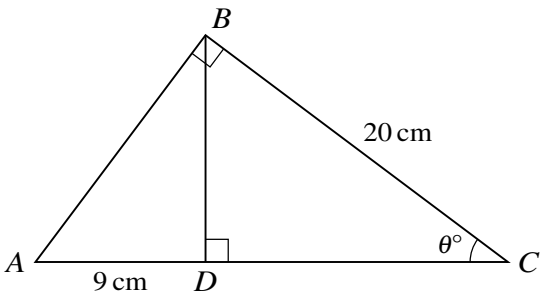
6



The diagram shows a triangle ABC in which $BC = 20$ cm and angle $ABC = 90°$. The perpendicular from B to AC meets AC at D and $AD = 9$ cm. Angle $BCA = \theta°$.

(i) By expressing the length of BD in terms of θ in each of the triangles ABD and DBC, show that $20 \sin^2 \theta = 9 \cos \theta$. [4]

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(ii) Hence, showing all necessary working, calculate θ. [3]