3

The diagram shows an arc BC of a circle with centre A and radius $5\,\text{cm}$. The length of the arc BC is $4\,\text{cm}$. The point D is such that the line BD is perpendicular to BA and DC is parallel to BA.

(i) Find angle BAC in radians. [1]

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(ii) Find the area of the shaded region BDC. [5]

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