The diagram shows a sector of a circle with centre C. The radii CA and CB each have length r cm and the size of the reflex angle ACB is θ radians. The sector, shaded in the diagram, has a perimeter of 65 cm and an area of $225\,\text{cm}^2$.

(a) Find the values of r and θ. [4]

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(b) Find the area of triangle ACB. [2]

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