5 The diagram shows the design for a badge, which will be made using wire.
The design is a circle inside a square *ABCD*

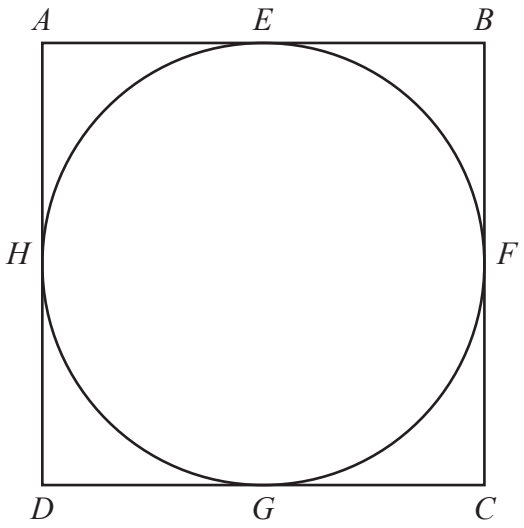


Diagram **NOT** accurately drawn

The circle touches the square at the points *E*, *F*, *G* and *H*

The area of the square is 81 cm^2

Calculate the total length of wire that will be needed to make the square and the circle.
Give your answer correct to 3 significant figures.

..... cm

(Total for Question 5 is 4 marks)

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