Marked example 2

Paper 2 style · Graphic display calculator

2 6 marks SL 3.5 · 3.6 ●●● Demanding

In a triangle ABC, $AB = 10$ cm, $AC = 7$ cm and $A\hat{B}C = 40°$.

(a) Find the two possible values of $A\hat{C}B$. **[4]**

(b) Find the smaller of the two possible areas of the triangle ABC. **[2]**

MARKSCHEME (a)

$\frac{\sin C}{10} = \frac{\sin 40°}{7}$ **M1**

$A\hat{C}B = 66.7°$ $(66.6741\ldots)$ **A1**

$180° - 66.674\ldots$ **M1**

$A\hat{C}B = 113°$ $(113.325\ldots)$ **A1**

Total 4 marks

Note The second angle with the same sine.

MARKSCHEME (b)

$B\hat{A}C = 180° - 40° - 113.325\ldots° = 26.674\ldots°$, $\frac{1}{2} \times 10 \times 7 \sin 26.674\ldots°$ **(M1)**

$15.7\ \text{cm}^2$ $(15.7120\ldots)$ **A1**

Total 2 marks

Note The smaller area comes with the obtuse C.

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