

Question Number	Scheme	Marks
7. (a)	$\frac{\sin A}{5} = \frac{\sin 30}{4}, \Rightarrow \sin A = \frac{5 \sin 30}{4}, \Rightarrow A = 38.68(2.....)$	M1A1
	$BDC = 180 - 36.682187... = 141.3178.. \Rightarrow 141.3$	A1
(b)	$AD^2 = 4^2 + 4^2 - 2 \times 4 \times 4 \times \cos 102.6356, \Rightarrow AD = 6.24 \text{ (3sf)}$	(3)
(c)	$\text{Area} = \frac{1}{2} \times 4 \times 4 \times \sin 102.6636 = 7.81 \quad \text{Area} = 7.81 \text{ cm}^2$	M1M1A1
		(3)
		M1A1
		(2)
		<b>(8)</b>

### Notes

(a)

M1 for the correct use of Sine Rule (either way around)

A1 for angle of  $38.7^\circ$  seen.

A1 for the correct angle  $BDC$

(b)

There are several ways of finding  $AD$ .

Apply marks on the following principle:

The first mark (M mark - is a B mark in Epen) is for using a method with correct trigonometry.

The second mark (M mark) is for substituting the correct values.

The third mark (A mark) is for 6.24 or 6.25

**For example;**

M1 for the correct use of Cosine Rule to find the length  $AD$

M1 for substituting the correct values

A1 for the correct length of  $AD$

(c)

M1 for the correct use of the formula or method for the area of a triangle. Ft their values

A1 for the correct area = 7.81 allow 7.8

**Please see Q6 for additional notes regarding extra angles and rounding**

### Useful Sketch

