

Question		Answer	Marks	AO	Guidance	
8		Sketch diagram consistent with information in the question	<b>B1</b>	<b>2.5</b>	Triangle ADC or ABC or quadrilateral ABCD and 8 and 12 indicated eg side lengths or radii. Circles may or may not be shown.	
		$60 = 2 \times \frac{1}{2} \times 8 \times 12 \times \sin B$	<b>M1</b>	<b>3.1a</b>	<b>M1</b> implies previous <b>B1</b> These next 3 marks can be for angles $B$ or $D$ .	
		$\sin B = \frac{5}{8}$ so $B = 38.7^\circ$ (0.675 rads)	<b>A1</b>	<b>1.1a</b>	One value of $B$ or $\cos B$	$\cos B = \frac{\sqrt{39}}{8}$
		OR $B = 141.3^\circ$ (2.47 rads)	<b>A1</b>	<b>3.2a</b>	Other value of $B$ or $\cos B$	$\cos B = -\frac{\sqrt{39}}{8}$
		$AC^2 = 8^2 + 12^2 - 2 \times 8 \times 12 \cos 38.7$ $= 58.1$	<b>M1</b>	<b>3.1a</b>	Use of cosine rule	
		$AC = 7.62$ cm	<b>A1</b>	<b>1.1</b>	Accept 7.6 www	
		$AC^2 = 8^2 + 12^2 - 2 \times 8 \times 12 \cos 141.3$ $= 357.9$				
		$AC = 18.9$ cm	<b>A1</b>	<b>1.1</b>	Accept 19 www <b>A0</b> if more than 2 answers	
			<b>[7]</b>			