

Question		Answer	Marks	Guidance
1	(a)	$\frac{1}{2} \times 3 \times 4 \times \sin 30$ $= 3$	M1 A1 [2]	
	(b)	$AC^2 = 3^2 + 4^2 - 2 \times 3 \times 4 \times \cos 30^\circ \quad (= 4.22)$ $AC = 2.05 \text{ (3 sf)}$	M1 A1 [2]	or $AC = \sqrt{3^2 + 4^2 - 2 \times 3 \times 4 \times \cos 30^\circ}$ Correct expression AC^2 or AC
	(c)	$\frac{\sin C}{3} = \frac{\sin 30}{\text{their } 2.05} \quad \text{oe} \quad \text{eg} \quad \frac{\sin C}{3} = \frac{\sin 30}{\sqrt{4.22}}$	M1	Correct sin rule using their (b)
		$ACB = \sin^{-1} \left(\frac{3 \sin 30}{\text{their } 2.05} \right) \quad (= \sin^{-1} 0.73 \dots)$	M1	Attempt inverse sine of $\frac{3 \sin 30}{\text{their (b)}}$. May be implied by answer
		$3^2 = '2.05'^2 + 4^2 - 2 \times '2.05' \times 4 \times \cos ACB$	M1	Correct cos rule using their (b)
		$ACB = \cos^{-1} \frac{'2.05'^2 + 4^2 - 3^2}{2 \times '2.05' \times 4}$	M1	Attempt inverse cos of $\frac{'2.05'^2 + 4^2 - 3^2}{2 \times '2.05' \times 4}$. May be implied by answer
		$ACB = 46.9^\circ \text{ or } 47.0^\circ \text{ or } 47.1^\circ \text{ (3 sf)}$	A1ft [3]	Allow 47° Condone premature rounding. FT their (b)