

Question			Answer	Marks	AO	Guidance	
3	(a)		$\cos CAB = \frac{4^2 + 9^2 - 7^2}{2(4)(9)}$	M1	1.1	Correct application of cosine rule cos CAB does not have to be the subject	Condone cos θ oe
			$= \frac{16+81-49}{72} = \frac{2}{3}$	A1	2.1	AG – at least one step of simplification from applying the formula to given answer	May see $7^2 = 4^2 + 9^2 - 2(4)(9)\left(\frac{2}{3}\right)$ 49 = 49 without intermediate step is A0
3	(b)		$\sin^2 CAB + \left(\frac{2}{3}\right)^2 = 1$	M1	3.1a	Correct use of $\sin^2 X + \cos^2 X = 1$ (oe) soi	Or using Pythagoras correctly with a right-angle triangle with hypotenuse 3 and another side 2 and attempt to find $\sin CAB$
			$\frac{\sqrt{5}}{3}$	A1	1.1	cao – accept any equivalent exact form	$\pm \frac{\sqrt{5}}{3}$ only is M1 A0
3	(c)		$\text{Area} = \frac{1}{2}(4)(9)\left(\frac{\sqrt{5}}{3}\right)$	M1	1.1	Correct use of $\frac{1}{2}(AC)(AB) \sin CAB$ with $AC = 4, AB = 9$ and their $\sin CAB$ soi	This mark can be earned for non-exact working as long as CAB is acute
			$= 6\sqrt{5} \text{ (cm}^2\text{)}$	A1	1.1	cao – accept any equivalent exact form www	
				[2]			