	Question		Answer	Marks	AO		Guidance
2	**(a)**	**(i)**	Show A in third quadrant, with length of 8 and relevant angle marked on given axes **[1]**	**B1**	**1.2**	Allow any correct angle	Condone A being located by correct **i** and **j** components instead of length and angle – could be stated as a coordinate or values marked on the axes
		(ii)	$x = 8\cos240^{\circ} = -4$ $y = 8\sin240^{\circ} = -4\sqrt{3}$	**M1**	**1.1a**	Attempt both components from magnitude of 8 and an angle	Could use 60° (no need to consider whether positive or negative for this mark) Allow M1 for $8\cos\theta$ and $8\sin\theta$ attempted Condone a value for θ that may not be consistent with their diagram Max of M1 only, if A incorrect on diagram
			A is $-4\mathbf{i} - 4\sqrt{3}\,\mathbf{j}$	**A1**	**1.1**	Obtain one correct component	Condone eg $x = -4$ for $-4\mathbf{i}$
			  [3]	**A1**	**1.1**	Obtain fully correct position vector	Allow 6.93, or better, for $4\sqrt{3}$ A0 if coordinate or column vector
	(b)		area $= 0.5 \times 8 \times 6 \times \sin 120^{\circ}$	**M1**	**3.1a**	Attempt area of triangle, using correct formula	M0 if 240° used Allow plausible angle ie 30°, 60°, 120°, 150° Allow other incorrect angles as long as explicit on their diagram Allow multi-step methods as long as fully correct method
			$= 12\sqrt{3}$ **[2]**	**A1**	**1.1**	Obtain $12\sqrt{3}$	Must be exact www eg M1A0 for $12\sqrt{3}$ from A in second quadrant M1A0 for $12\sqrt{3}$ from using 60° without justification that $\sin120^{\circ} = \sin60^{\circ}$

Question			Answer	Marks	AO		Guidance
(c)			$6\mathbf{i} - (-4\mathbf{i} - 4\sqrt{3}\,\mathbf{j})$	**M1**	**3.1a**	Attempt $6\mathbf{i}$ – (their OA)	Allow BOD for $6\mathbf{i} - -4\mathbf{i} - 4\sqrt{3}\,\mathbf{j}$, even if final answer is not commensurate with 'invisible brackets'
			C is $10\mathbf{i} + 4\sqrt{3}\,\mathbf{j}$	**A1**	**1.1**	Obtain $10\mathbf{i} + 4\sqrt{3}\,\mathbf{j}$	Allow 6.93, or better, for $4\sqrt{3}$
				[2]			**SC** B1 for $2\mathbf{i} - 4\sqrt{3}\,\mathbf{j}$ or $-10\mathbf{i} - 4\sqrt{3}\,\mathbf{j}$ ie a valid parallelogram having misinterpreted *OABC*