Question			Answer	Marks	Part Marks and Guidance	
1	(a)	(i)	Angles meeting at a point completing 360° eg 	1		0 if not clearly 4 angles
		(ii)	Sum to 360 oe	1		Condone '= 360'
	(b)		130 nfww	4	**M3** for $\frac{720-90-90-70 \quad 210}{2}$ or better Or **M2** for $\frac{(their\ 720)-90-90-70 \quad 210}{2}$ Or **M1** for a correct method for internal angles of a hexagon AND If no more than **M1** scored then **SC1** for 90 + 90 + 70 + 210 or better	Following a correct method for internal angles of a hexagon

2			27 Angle in a semicircle = 90° Angles (in a) triangle = 180°	1 1 1	**M1** for 180 – 90 – 63	Condone 'Angles from a diameter [on or to the circumference]''

3	**(a)**		8	3	**M2** for $\frac{5 \times 6.4}{4}$ oe Or **M1** for 5 ÷ 4 soi or 6.4 ÷ 4 soi	
	(b)		25	1		

4			180	1		
			"triangle" **with** "angles"	1		Ignore 'isosceles' etc
			"line" **with** "angles"	1		<u>For the second and third mark:</u> Provided there is no implication that they add to anything other than 180 degrees
			interior oe	1		eg allow 'internal', 'inside' and 'inner'

5			5.76 to 5.8	3	**M2** for $\frac{8.5 \times \sin 36}{\sin 60}$ oe Or **M1** for $\frac{x}{\sin 36} = \frac{8.5}{\sin 60}$ oe	

6			61.8 to 62 final answer	4	**B1** for angles 137 <u>or</u> 16 seen **AND** **M2** for $\frac{25}{\sin(their16)} \times \sin(their137)$ Or **M1** for any fully numerical attempt at sine rule	Correct method with: Rads gives 81.8.. Grads gives 84.0… May be on diagram *Their* 137 > 90 ie <u>Any</u> equation with <u>two</u> sin terms and 25

7	**(a**		$\sqrt{\left(10^2 - \left(3^2 + 3^2\right)\right)}$ oe 9.05 to 9.08	M2 A1	**M1** for $\sqrt{\left(3^2 + 3^2\right)}$ or $\sqrt{\left(6^2 + 6^2\right)}$	
	(b)		64.8 to 65.6	3	**M2** for $\sin^{-1}(9.1 \div 10)$ or better or for $\cos^{-1}(their\sqrt{18} \div 10)$ oe or for $\tan^{-1}(9.1 \div their\sqrt{18})$ oe or better Or **M1** for sight of $\sin x = \frac{9.1}{10}$ oe etc or for $\frac{\sin x}{9.1} = \frac{\sin 90}{10}$ oe Or **SC1** for answer 72.54.. rot	For $\sqrt{18}$ accept 4.242640687 rot For 9.1 accept 9.05538513 rot Any correct trig. equation for the appropriate triangle

8	**(a)**		106.225…rot to at least 1dp	3	***Mark best attempt*** **M2** for $\frac{10^2+17^2-22^2}{2\times10\times17}$ oe Or **M1** for $22^2 = 10^2+17^2-2\times10\times17\times\cos x$ oe	M2 soi by -0.2794117647 rot Or -95/340
	(b)		48.3 to 49	6	**M1** for ½ × 10 × 17 × sin106 oe **AND** **M2** for $\frac{106}{360} \times \pi \times 6^2$ oe Or **B1** for $\frac{106}{360}$ or $\frac{360}{106}$ oe seen **AND** **M1** for *their* triangle – *their* sector soi **AND** **A1** for 81.6 to 82 Or for 33 to 33.3	Dep. on at least 1 previous M mark scored Accept 10.6π or better