Paper: 1MA1/1H				
Question	**Working**	**Answer**	**Mark**	**Notes**
5 **Q1**		70.5	P1 P1 P1 P1 A1	starts process of Pythagoras e.g. $5^2 + 12^2$ complete process for Pythagoras e.g. $\sqrt{5^2+12^2}$ or $\sqrt{25+144}$ or $\sqrt{169}$ (=13) (dep P1 for Pythagoras) process of adding all the lengths e.g. 5 + 5 + 12 + 12 + "13" (=47) (indep) process of multiplying at least 2 lengths by 1.5 cao SC: any evidence of working with Pythagoras award the P1 or P2

Paper 1MA1: 3H				
Question	**Working**	**Answer**	**Mark**	**Notes**
8 **Q2**		5.59	M1	For use of $\pi r^2 = 49$, where r is the radius or $r = 3.9(49\ldots)$ or diameter $= 7.8(9865\ldots)$
			M1	For use of Pythagoras to set up an equation in x^2 e.g. $x^2 + x^2 = (d)^2$ or $x^2 = r^2 + r^2$ For use of trigonometry to set up an equation in x eg $\sin 45 = x \div d$
			M1	(dep on M2) Rearrange to $(x^2 =)$ 2× "3.949.." ^{2} Rearrange to $(x=)$ "7.898.." × sin 45 oe
			A1	5.5 to 5.6

Paper: 1MA1/3H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
8 (a)	Mistake described	C1	for statement describing a mistake **Acceptable** eg should be $AC^2 - AB^2$ she should do $8^2 - 6^2$ she should be subtracting not adding the numbers she thought that BC was the hypoteneuse when it was actually AC should be $BC^2 + AB^2 = AC^2$ .....should be $8^2 = 6^2 + BC^2$ **Not acceptable** eg she has not used Pythagoras correctly $6^2 + 8^2$ is 120 the answer should be $\sqrt{28}$ or 5 or 5.3 or 5.2915 $BC + AB = AC$	
Q3				
(b)	Explanation	C1	for explanation **Acceptable examples** the scale factor used is 2.5 5 ÷ 2 is not 1.5 10 ÷ 4 is more than 1.5 the scale factor is not 1.5 he has not used the correct scale factor has enlarged it by too much ZY should be 6 **Not acceptable examples** the grid is not large enough	Note that a diagram alone is insufficient.

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
7 **Q4**	35.3	P1 P1 P1 A1	for starting the process to find length of third side of triangle, eg $9^2 - 6^2$ (= 45) **or** $6^2 + x^2 = 9^2$ for $\sqrt{9^2 - 6^2}$ or $\sqrt{81-36}$ or $\sqrt{45}$ or $3\sqrt{5}$ (= 6.7..) **or** $r^2 = 45$ for stating or using $\pi \times$ [radius]$^2 \div 4$ for answer in range 35.2 to 35.4	 [radius] is any value If an answer in the range 35.2 to 35.4 is given in the working space then incorrectly rounded, award full marks No working, answer only, no marks

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
5 **Q5**	41.6	P1	for start of process to find the length of the hypotenuse, eg (hyp^2 =) $8^2 + 10^2$ (= 164)	Note lengths may be seen on the diagram
		P1	for complete process to find hypotenuse, eg $\sqrt{8^2+10^2}$ **or** $\sqrt{64+100}$ **or** $\sqrt{164}$ (= 12.8…)	
		P1	(dep P2) for complete process to find the required perimeter, eg 8 + 8 + 10 + "12.8" + "12.8 – 10" **or** $16 + 4\sqrt{41}$	8 + 8+ "12.8" + "12.8" oe is acceptable for this mark
		A1	for answer in the range 41 to 42	If an answer in the range 41 to 42 is given in the working space then incorrectly rounded, award full marks.

Paper: 1MA1/3H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
10 **Q6**	14.14	P1	works out scale factor eg (9 + 6) ÷ 6 (= 2.5) **OR** for start of process to find angle *DBE* eg sin $B = \frac{2}{6}$ oe	Note method can be carried out in either order
		P1	uses Pythagoras eg $6^2 - 2^2$ (= 32) or $\sqrt{32}$ (= 5.6...) **OR** calculates *AC* eg 2 × "2.5" (= 5) **OR** for complete process to find angle *DBE* eg $\sin^{-1}\left(\frac{2}{6}\right)$ (= 19.4...)	May be seen on diagram
		P1	complete process to find *CB* eg "2.5" × "√32" (= 10√2) **or** $\sqrt{(9+6)^2 - "5"^2}$ (= 10√2) **OR** uses trigonometry, eg 15 × cos "19.4..."	
		A1	14.1 to 14.15	If the answer is given within the range but then rounded incorrectly award full marks.

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
13 **Q7**	18.6	M1 A1	for use of Pythagoras eg, $(-5 - 6)^2 + (8 - -7)^2$ or 121 + 225 or 346 or $\sqrt{346}$ answer in the range 18.6 to 18.61	 If a correct answer within the range is shown in working but incorrectly rounded award full marks

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
13 **Q8**	Relationship shown	M1	for use of Pythagoras' theorem, eg $d_A{}^2 = d_B{}^2 + d_C{}^2$ **or** $a^2 = b^2 + c^2$ **or** $(2x)^2 = (2y)^2 + (2z)^2$ **or** $a = \sqrt{b^2 + c^2}$ **or** uses a 3, 4, 5 triangle	May be seen at any stage Where d_A, a, $2x$, etc are their diameters Could be any Pythagorean triple
		M1	for forming correct expressions for the areas of at least 2 of the 3 semicircles, eg at least two of $\frac{1}{2}\pi\left(\frac{a}{2}\right)^2$, $\frac{1}{2}\pi\left(\frac{b}{2}\right)^2$, $\frac{1}{2}\pi\left(\frac{c}{2}\right)^2$ or at least two of $\frac{1}{2}\pi x^2$, $\frac{1}{2}\pi y^2$, $\frac{1}{2}\pi z^2$ or at least two of $\frac{1}{2}\pi\left(\frac{5}{2}\right)^2$, $\frac{1}{2}\pi\left(\frac{3}{2}\right)^2$, $\frac{1}{2}\pi\left(\frac{4}{2}\right)^2$	Where a, b, c are their diameters Where $2x$, $2y$, $2z$ are their diameters Where 3, 4, 5 are their diameters
		C1	for a fully correct and convincing chain of reasoning, eg showing that eg $\frac{1}{2}\pi\left(\frac{a}{2}\right)^2 = \frac{1}{2}\pi\left(\frac{b}{2}\right)^2 + \frac{1}{2}\pi\left(\frac{c}{2}\right)^2$ can be reduced to $a^2 = b^2 + c^2$ **or** that $(2x)^2 = (2y)^2 + (2z)^2$ is the same as $\frac{1}{}\pi x^2 = \frac{1}{}\pi y^2 + \frac{1}{}\pi z^2$	

Paper: 1MA1/3H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1 **Q9**	7.5	M1 A1	for correct use of Pythagoras, eg.$8.5^2 - 4^2$ (= 56.25) or $4^2 + x^2 = 8.5^2$ for 7.5 or $7\frac{1}{2}$ or $\frac{15}{2}$	Must have values substituted Trigonometry may be used but M1 only awarded when complete method shown.