1			20.9	M1	correct recall of appropriate formula eg $\sin x = \dfrac{5}{14}$
				A1	for 20.9(248…)

2			9.54	P1	$10^2 - 5^2$ (=75)
				P1	"75" + 4^2 (=91)
				P1	$\sqrt{(10^2 - 5^2 + 4^2)}$
				A1	9.53 – 9.54

3			70.5	P1	starts process of Pythagoras e.g. $5^2 + 12^2$
				P1	complete process for Pythagoras e.g. $\sqrt{5^2 + 12^2}$ or $\sqrt{25+144}$ or $\sqrt{169}$ (=13)
				P1	(dep P1 for Pythagoras) process of adding all the lengths e.g. 5 + 5 + 12 + 12 + "13" (=47)
				P1	(indep) process of multiplying at least 2 lengths by 1.5
				A1	cao SC: any evidence of working with Pythagoras award the P1 or P2

4			32.3	P1	for using Pythagoras to find length of third side of triangle, eg $7.5^2 - 6^2$ or $6^2 + x^2 = 7.5^2$ or uses trigonometry to find angle in triangle, eg $\sin A = \dfrac{6}{7.5}$ or $\cos B = \dfrac{6}{7.5}$
				P1	(dep P1) for complete process to find length of third side of triangle eg $\sqrt{7.5^2 - 6^2}$ or $\sqrt{56.25 - 36}$ or $\sqrt{20.25}$ (=4.5) or uses trigonometry to find base length of triangle, eg 7.5 × cos "A" or 7.5 × sin "B" or $\dfrac{6}{\tan "A"}$
				P1	(dep P2) for 24 – 10 – "4.5" (= 9.5)
				P1	(indep) for process to find angle CDA, eg $\tan CDA = \dfrac{6}{base}$ from right-angled triangle
				A1	for answer in the range 32.2 to 32.3

5	(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
				  $BC + AB = AC$	

	(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.

6	264	P1	correct substitution into the volume formula, eg $56.8 = \frac{1}{3} \times \pi \times r^2 \times 3.6$	
		P1	completes process to find base radius or the value of r^2, eg $r = \sqrt{\frac{56.8 \times 3}{\pi \times 3.6}}$ $(=3.88158...)$ or $r^2 = \frac{56.8}{1.2\pi}$ $(=15.066)$	
		P1	Uses Pythagoras to find the sloping length, eg $\sqrt{"3.88..."^2 + 3.6^2}$ $(=5.29.....)$	
		P1	process to find an equation in AOB, eg $\pi \times "3.88" \times "5.29" = \frac{AOB}{360} \times \pi \times "5.29"^2$ or $\frac{AOB}{360} \times \pi \times 2 \times "5.29" = 2 \times \pi \times "3.88"$ or $\frac{AOB}{360} \times "5.29" = "3.88"$	AOB does not need to be the subject of the equation
		A1	answer in the range 263.9 to 264.1	

7	35.3	P1	for starting the process to find length of third side of triangle, eg $9^2 - 6^2 \ (= 45)$ or $6^2 + x^2 = 9^2$	
		P1	for $\sqrt{9^2 - 6^2}$ or $\sqrt{81 - 36}$ or $\sqrt{45}$ or $3\sqrt{5}$ $(= 6.7..)$ or $r^2 = 45$	
		P1	for stating or using $\pi \times [\text{radius}]^2 \div 4$	[radius] is any value
		A1	for answer in range 35.2 to 35.4	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

8	17.6	P1	for correct trig statement, eg $\sin 30 = \frac{h}{6}$	
		P1	for complete process to find h, eg $6 \times \frac{1}{2}$ $(= 3)$	
		P1	for correct substitution into the area of a trapezium formula, eg $\frac{1}{2}(a+b) \times "3" = 66$ or $a + b = 44$ or $\frac{1}{2}(2x + 3x) \times h = 66$	
		P1	for complete correct process to find the length of AB, eg $\left[\frac{66 \times 2}{3} \div (2 + "3") \right] \times 2$	
		A1	cao	An answer of $\frac{88}{5}$ gets P4 A0

9	41.6	P1	for start of process to find the length of the hypotenuse, eg $(\text{hyp}^2 =) 8^2 + 10^2 (= 164)$	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.