

1		8600	P1 P1 P1 A1	for process to find the length of the rectangle, e.g. $24 \times 4 (=96)$ for process to find the perpendicular height of an equilateral triangle of side (24×2) cm, e.g. $48\sin 60 (=41.5(69..))$ or $\sqrt{48^2 - 24^2} (=24\sqrt{3}$ oe) for complete process to find the width of rectangle, e.g. " $41.5(69..)$ " + $24 + 24 (=89.5(69..))$ for answer in the range 8592 to 8602
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2		5.59	M1 M1 M1 A1	For use of $\pi r^2 = 49$, where r is the radius or $r = 3.9(49..)$ or diameter = $7.8(9865..)$ For use of Pythagoras to set up an equation in x^2 e.g. $x^2 + x^2 = (d)^2$ or $x^2 = r^2 + r^2$ (dep on M2) Rearrange to $(x^2 =) 2 \times "3.949.."^2$ 5.5 to 5.6 For use of trigonometry to set up an equation in x eg $\sin 45 = x \div d$ Rearrange to $(x=) "7.898.." \times \sin 45$ oe
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3		Daisy is wrong (supported)	P1 P1 A1 C1	for process to find area of any relevant circle ie $\pi \times 4^2 (=16\pi)$, $\pi \times 7^2 (=49\pi)$, $\pi \times 10^2 (=100\pi)$ or 7^2 and 4^2 for completed method to find shaded area eg " $\pi \times 7^2$ " - " $\pi \times 4^2$ " ($=33\pi$) or use of radii eg $7^2 - 4^2 (=33)$ for 2 comparable figures, eg 33π and 100π or 33 and 100 or 103 to 103.7 and 314 to 314.2 or 103 to 103.7 and 104.6 to 104.8 statement eg No because it should be $\frac{33}{100}$ and their accurate figures Allow use of $\pi = 3$ or better
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4 (a)		31.4	P1 A1	for working with circumference formula, eg $\pi \times 80 (=251.1976...)$ oe for answer in the range 31.4 to 31.5 accept 10π
(b)		No (supported)	C1	Mean distance stays the same with reason, eg total distance remains unchanged or same number of points

5	905	P1 P1 P1 P1 A1	for correct use of formula for the volume of a sphere eg $\frac{1}{4} \times \frac{4}{3} \times \pi \times r^3 (=576\pi$ or $1809..)$ OR $576\pi \times 4$ or 2304π or $7238.. (= \frac{4}{3} \times \pi \times r^3)$ for a complete correct process to find r , eg $r = \sqrt[3]{\frac{576 \times 4 \times 3}{4}}$ or $r = 12$ for a process to find the curved surface area eg $\frac{4 \times \pi \times [\text{radius}]^2}{4} (=144\pi$ or $452..)$ OR the surface area of both flat surfaces eg $(2 \times \frac{\pi \times [\text{radius}]^2}{2})$ OR complete expression for the total surface area eg $\frac{4\pi r^3}{4} + \frac{\pi r^2}{2} \times 2$ oe for process to find the complete surface area eg $\frac{4 \times \pi \times [\text{radius}]^3}{4} + (2 \times \frac{\pi \times [\text{radius}]^2}{2})$ answer in the range 904.7 – 905 or 288π (SCB2 for an answer in the range 358.1 – 359.2)	We do not need to see what is in the brackets to award this mark. The contents of the bracket alone would score P0 Could be shown in several stages $\sqrt[3]{\frac{576 \times 4 \times 3}{4}} = \sqrt[3]{1728}$ Radius used must be clearly identified as their radius of the solid If an answer is given in the range but then incorrectly rounded, award full marks.
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6	shown	C1 C1 C1 C1	for method to find area of semicircle, eg $\pi \times 10^2 \div 2 (=50\pi)$ for method to find area of quarter circle, for $\pi \times 20^2 \div 4 (=100\pi)$ for a complete method to find area shaded and area of square, eg $\pi \times 20^2 \div 4 - \pi \times 10^2 \div 2$ and 20×20 fully correct working leading to $\frac{\pi}{8}$	Can award first 3 marks if a value for π is used Working out to find the area of the shaded region must be shown
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7	35.3	P1	for starting the process to find length of third side of triangle, eg $9^2 - 6^2 (= 45)$ or $6^2 + x^2 = 9^2$	[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
		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 $\pi \times [\text{radius}]^2 \div 4$	
		A1	for answer in range 35.2 to 35.4	