

Mensuration P2 Answers

1)	1.62	3	M1 $\frac{1}{4} \pi 0.8^2$ M1 adding (0.8×1.4) to their $k \pi$
2)	6.4×10^7	2	M1 $64 \times 100^2 \times 10^2$ or 64 000 000 oe
3)	(a) 10(.0..) (b) 9.80	1 3	 M2 $\sqrt{((a)^2 - 2^2)}$ or M1 $PT^2 + 2^2 = (a)^2$
4)	(a) 201 (b) 87.9 or 88.0	2 4	M1 $\pi \times 8^2$ M1 $\frac{45}{360} \times 2 \times \pi \times 12$ d M1 $2 \times \pi \times 8$e M1 ft for their $(4d + e)$ which must come from multiples of π SC2 43.9 or 44.0
5)	(a) 10.9 (b) 15.1	2 2	M1 for $\frac{40}{360} \times \pi \times 5.6^2$ M1 for $\frac{40}{360} \times \pi \times 2 \times 5.6$ (= 3.91..)
6)	(a) Answer given (b) $k = (\pm) \sqrt{\frac{4A}{(4-\pi)}}$ or $2\sqrt{\frac{A}{(4-\pi)}}$	2 3	M1 $(A =)k^2 - \pi\left(\frac{k}{2}\right)^2$ E1 $A = k^2 - \frac{\pi k^2}{4}$ correctly completed to $4A = 4k^2 - \pi k^2$ M1 factorising (must contain a π) M1 division (by coefficient of k^2) M1 square root
7)	112 or 112.3 to 112.33	3	M2 for $\pi \times 6^2 - \pi \times 0.5^2$ or M1 for $\pi \times 6^2$ or $\pi \times 0.5^2$ seen
8)	114.6 or 114.57(67027..) to 114.59(1155..)	3	M2 $2 \times \pi \times 4 \times x / 360 = 8$ or M1 $2 \times \pi \times 4 \times x / 360$ M2 $x / 360 = 8 / 2\pi 4$ or B1 $8 / 2\pi 4$ or $2\pi 4 / 8$ seen
9)	113000 or 112795 to 112840	3	B1 for 85000 M1 for $\pi \times 0.65^2 \times \text{figs } 85$
10)	$10r^2$ cao www	3	B1 for $\left(\frac{\theta}{360} =\right) \frac{4r}{2 \times \pi \times 5r}$ M1 for $\frac{4r}{2 \times \pi \times 5r} \times (5r)^2 \pi$