Topic Test 1 Mark Scheme

Circumference and area - Higher

Q	Answer	Mark	Comments
1	πr^2 and $\pi(2 \times \text{their } r)^2$ or πr^2 and $4\pi r^2$	M1	Allow a value used for r eg $\pi \times 10^2$ and $\pi(2 \times \text{their } 10)^2$ or 100π and 400π
	their $4\pi r^2$ – their πr^2 or $3\pi r^2$	M1dep	eg their 400π – their 100π or 300π
	$\frac{\text{their } 3\pi r^2}{\text{their } 4\pi r^2}$	M1dep	oe eg $\frac{\text{their } 300\pi}{\text{their } 400\pi}$
	$\frac{3}{4}$	A1	SC2 $\frac{1}{4}$
2	$\pi \times 5^2$ or 25π or [78.5, 78.55]	M1	
	$\pi \times 5 \times 24$ or 120π or [376.8, 377.04]	M1	
	their [78.5, 78.55] + their [376.8, 377.04]	M1dep	145π
	[455.3, 455.59]	A1	
3	$4\pi r^2 = 4.5$	M1	oe
	$r^2 = 4.5 \div (4\pi)$ or 0.358...	M1dep	oe
	0.598... or 0.6(0) or $\sqrt{\frac{4.5}{4\pi}}$	A1	
4	$6\pi + 24$ or $\frac{72}{\pi}$	B1	

Q	Answer	Mark	Comments
5	$\frac{45}{360} \times 2\pi r = 18$	M1	oe
	$r = \frac{18 \times 360}{45 \times 2\pi}$	M1dep	oe
	[22.91, 22.93] or 23	A1	
6	$\frac{\theta}{360} \times \pi \times 5^2 = 5\pi$	M1	oe
	$\theta = \frac{5\pi \times 360}{25\pi}$	M1dep	oe
	72(°)	A1	
	$\frac{\text{their } 72}{360} \times 2 \times \pi \times 5$ or [6.28, 6.284]	M1	oe
	2π	A1ft	ft their 72°