

Circles Past Paper Questions (MS)



Q1.

	Working	Answer	Mark	Notes
(a)		circle drawn, centre O radius OP	1	B1 for circle drawn radius OP within guidelines of overlay
(b)		chord drawn	1	B1 for any line drawn joining two points on circumference of circle (accept diameter) [NB shaded segment scores B0]

Q2.

5MB2F/01 June 2015				
Question	Working	Answer	Mark	Notes
(a)		diameter	1	B1 cao
(b)		tangent	1	B1 cao
(c)		sector drawn	1	B1 cao

Q3.

Question	Working	Answer	Mark	Notes
		Diameter	B2	for a fully correct answer
		Radius	(B1)	for 2 or 3 correct answers
		Chord		
		Tangent		

Q4.

PAPER: 1MA0 2H				
Question	Working	Answer	Mark	Notes
		440	2	M1 for $140 \times \pi$ oe or 439 A1 for 439.6 – 440



Q5.

PAPER: 5MB3H_01				
Question	Working	Answer	Mark	Notes
		105.7	2	M1 for $\pi \times 5.8 \times 5.8$ oe A1 for 105.6 to 105.8

Q6.

Question	Working	Answer	Mark	Notes
	$\pi \times 20$	62.8 cm	3	M1 $\pi \times 20$ or $\pi \times 19.5$ or $\pi \times 19.95$ A1 62.8 – 63 B1(indep) for units consistent with answer

Q7.

	Working	Answer	Mark	Notes
*		4 rolls	4	M1 for $\pi \times 2.4$ M1 for $(\pi \times 2.4) \div 2$ or 7.5 to 7.541 M1 for or 3.75 or 3.76... or 3.77... or (2, 4,) 6 , 8 C1 for a clear statement that 4 (rolls) are needed

Q8.

	Working	Answer	Mark	Notes
		6.87	4	M1 for $\pi \times 4 \times 4$ or $\pi \times 4^2$ or $\pi \times 16$ or $\pi r^2 = 50.26...$ M1 for ' $\pi r^2 \div 2$ ' M1 for $8 \times 4 - '\pi r^2 \div 2'$ A1 for 6.86 – 6.88



Q9.

Question	Working	Answer	Mark	Notes
*		Conclusion (supported)	4	M1 for $\pi \times 120^2 (= 45\,216 - 45\,249)$ M1 for " $\pi \times 120^2$ " $\div 1800$ A1 for 25.1 – 25.2 C1 ft (dep on M2) for appropriate conclusion from their figures OR M1 for $\pi \times 120^2 (= 45\,216 - 45\,249)$ M1 for 20×1800 A1 for 36 000 and 45 216 – 45 249 C1 ft (dep on M2) for appropriate conclusion from their figures OR M1 for $\pi \times 120^2 (= 45\,216 - 45\,249)$ M1 for " $\pi \times 120^2$ " $\div 20$ A1 for 2260 – 2263 C1 ft (dep on M2) for appropriate conclusion from their figures OR M1 for 1800×20 M1 for $36000 \div \pi (= 11\,457 - 11465)$ A1 for 107(0...) C1 ft (dep on M2) for appropriate conclusion from their figures

Q10.

Question	Working	Answer	Notes
	$\frac{1}{4} \times \pi \times 4.8^2$ $\frac{1}{2} \times 4.8 \times 4.8$ $\frac{1}{4} \times \pi \times 4.8^2 - \frac{1}{2} \times 4.8 \times 4.8$	6.58	B1 for use of formula for area of a circle P1 for complete process to find area of shaded region A1 for 6.56 – 6.58

Q11.

Paper 1MA1: 2F			
Question	Working	Answer	Notes
		66.9	P1 for process to find the area of one shape, eg. $19 \times 16 (= 304)$ or $\pi \times 8^2 (= 201.06\dots)$ P1 for process to find the shaded area, eg. "304" – "201.06" $\div 2 (= 203.46\dots)$ P1 for a complete process to find required percentage, eg. $\frac{203.46}{304} \times 100$ A1 for answer in range 66 to 68



Q12.

PAPER: 1MA0 2F				
Question	Working	Answer	Mark	Notes
*		No + reason	4	<p>M1 for intention to find the circumference eg $140 \times \pi (=439.82\dots)$ A1 for circumference = 439 – 440</p> <p>M1 (dep on previous M1) for a complete method shown that could arrive at two figures that are comparable, eg “C”$\div 60 \times 12 (=87.96\dots)$, $90 \div 12 \times 60 (=450)$, $90 \times 60 \div C (=12.27)$, “C”$\div 90 \times 12 (=58.64\dots)$</p> <p>C1 (dep on both M marks) for No and explanation that shows a correct comparison eg only 84 people could sit around the tables or that 13 tables are needed or that 480 cm is needed.</p>

Q13.

Question	Working	Answer	Mark	Notes
*	$(17-2.8) \times 9.5 = 134.9$ $\pi \times (3.8 \div 2)^2 = 11.34\dots$ $134.9 - 2 \times 11.34$ $= 112.21$ $112.21 \div 25 = 4.488$	5	5	<p>M1 for $(17-2.8) \times 9.5 (=134.9)$ or $17 \times 9.5 - 2.8 \times 9.5 (=161.5 - 26.6 = 134.9)$ M1 for $\pi \times (3.8 \div 2)^2 (=11.33 - 11.35)$ M1(dep on M1) for '134.9' – 2×11.34 A1 for 112 - 113 C1(dep on at least M1) for 'He needs 5 boxes' ft from candidate's calculation rounded up to the next integer.</p>

Q14.

Question	Working	Answer	Mark	Notes
		Daisy is wrong	P1	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
		(supported)	P1	for completed method to find shaded area eg “ $\pi \times 7^2$ ” – “ $\pi \times 4^2$ ” (=33 π) or use of radii eg $7^2 - 4^2 (=33)$
			A1	for 2 comparable figures, eg 33 π and 100 π 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
			C1	statement eg No because it should be $\frac{33}{100}$ and their accurate figures Allow use of $\pi = 3$ or better

Q15.



Question		Working	Answer	Mark	Notes
			$36 - 9\pi$	3	M1 for $\pi \times 6 \times 6$ or 36π seen value 113.03-113.2 M1 for $(12 \times 12 - \pi \times 6 \times 6) \div 4$ or value 7.7-7.8 A1 for $36 - 9\pi$ oe OR M1 for $\pi \times 6 \times 6 \div 4$ or 9π seen or value 28.2-28.3 M1 for $6 \times 6 - \pi \times 6 \times 6 \div 4$ or value 7.7-7.8 A1 for $36 - 9\pi$ oe NB: for M marks π may be given numerically.