Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
Q1 9 (a)	Radius	B1	cao	Accept spelling mistakes
(b)	Tangent	B1	cao	Accept spelling mistakes

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
Q2 10 (a)	Diameter drawn	B1	diameter drawn	Accept hand drawn, intention through centre and from edge to edge. Ruler not required but intention clear.
(b)	Segment shaded	B1	segment drawn unambiguously	Line must go edge to edge (condone extending outside the circle). Freehand acceptable. Can also draw a diameter here (as semi-circle).

Paper 1MA1: 1F				
Question	**Working**	**Answer**	**Mark**	**Notes**
26 **Q3**		Daisy is wrong (supported)	P1 P1 A1 C1	for process to find area of any relevant circle ie $\pi\times4^2$ (=16π), $\pi\times7^2$ (=49π), $\pi\times10^2$ (=100π) **or** 7^2 and 4^2 for completed method to find shaded area eg "$\pi\times7^2$" – "$\pi\times4^2$" (=33π) **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 π = 3 or better

Paper: 1MA1/2F				
Question	**Working**	**Answer**	**Mark**	**Notes**
18 (a) **Q4** (b)		31.4 No (supported)	P1 A1 C1	for working with circumference formula, eg π × 80 (=251.(….)) oe for answer in the range 31.4 to 31.5 accept 10π Mean distance stays the same with reason, eg total distance remains unchanged or same number of points

Paper: 1MA1/1F				
Question	**Working**	**Answer**	**Mark**	**Notes**
18 (a **Q5** (b)		6 to 8 underestimate	M1 M1 M1 A1 C1	evidence of recall of area formula with correct radius e.g. $\pi \times 10^2$ calculation to find number of boxes, (area) ÷ (coverage figure) (indep) evidence of estimation, eg π in range 3 to 3.2, or coverage figure of 40, 42, 45, 48 or 50 (dep on M3) answer in the range 6 to 8 e.g. (ft from (a)) underestimate: true area greater so could need more boxes. Must relate to estimation, not rounding of answer.

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
26 **Q6**	shown	C1 C1 C1 C1	for method to find area of semicircle, eg $\pi \times 10^2 \div 2$ (= 50π) for method to find area of quarter circle, for $\pi \times 20^2 \div 4$ (= 100π) 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

Paper: 1MA1/2F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
19 **Q7**		4378.2(0)	P1 P1 P1 P1 A1	for a process to find the circumference of the circle **or** the semi circle, eg π × 50 (= 157.0796327) **or** 0.5 × π × 50 (= 78.53981634) for a complete process to find the perimeter of the field, eg (0.5 × π × 50) + 50 (= 128.5...) **OR** for working with one cost eg "157.07…" × 29.86 (= 4690.11..) **or** "78.5…" × 29.86 (= 2345.198…) **or** 50 × 29.86 (=1493) **or** 3 × 180 (= 540) For finding the costs of two different aspects eg 2 of "78.5…" × 29.86 (= 2345.1..) **or** 50 × 29.86 (= 1493) **or** 3 × 180 (= 540) for a adding at least 2 costs eg "2345.1.." + "540" (=2885.1..) **or** "1493" + "540" (=2033) **or** "128.5…" × 29.86 (= 3838.2..) for answer in the range 4377 – 4392	Figures may be truncated or rounded May use circle at this point, figures imply method One cost is 1 length or labour Figures may be truncated or rounded Two different aspects means arc and straight edge or arc and labour or straight edge and labour Condone circle and labour or circle and straight edge. Finding the cost of the perimeter is two costs added and so implies the previous P1 The circle is not allowed to be counted as one of the two costs for this mark

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
30 **Q8**	Result shown	M1 M1 C1	for finding the area of **A or** the area of **B**, eg $(\pi \times 15^2) \div 4$ (=56.25π = 176.(7…) or 177) **or** $\pi \times 2.5^2$ (= 6.25π = 19.6(3…)) for finding the area of **A and** the area of **B**, eg $(\pi \times 15^2) \div 4$ **or** "6.25π" × 9 (=56.25π = 176.(7…) or 177) **AND** $\pi \times 2.5^2$ **or** "56.25π" ÷ 9 (= 6.25π = 19.6(3…)) for conclusion eg, $\sqrt{56.25\pi \div 9 \div \pi}$ =2.5 oe **or** $\sqrt{\frac{6.25\pi \times 9 \times 4}{\pi}}$ = 15 oe **or** 56.25π ÷ 9 = 19.6(3…) **and** $\pi \times 2.5^2$ = 19.6(3…) oe **or** 6.25π × 9 = 176.(7…)or 177 **and** $(\pi \times 15^2) \div 4$ = 176(.7..) or 177 oe **or** for $((\pi \times 15^2) \div 4) \div (\pi \times 2.5^2)$ =9 oe	May work without π or with an approximation of π Values may be rounded or truncated

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
27 **Q9**	35.3	P1 P1 P1 A1	for starting the process to find length of third side of triangle, eg $9^2 - 6^2$ (=45) **or** $6^2 + x^2 = 9^2$ for $\sqrt{9^2 - 6^2}$ or $\sqrt{81-36}$ or $\sqrt{45}$ or $3\sqrt{5}$ (= 6.7..) **or** $r^2 = 45$ for stating or using $\pi \times [\text{radius}]^2 \div 4$ for answer in range 35.2 to 35.4	 [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

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
27 **Q10**	18.3	P1 P1 P1 A1	for finding the area of the triangle eg $0.5 \times 8 \times 8$ (=32) for finding the area of the circle $\pi \times 8 \times 8$ (= 201.06..) for finding the area of the sector eg $\frac{1}{4} \times \pi \times 8^2$ **or** "201.06.." ÷ 4 (= 50.26...) for an answer in the range 18.2 to 18.3	Accept rounded or truncated figures If the answer is given within the range but then rounded incorrectly award full marks.