Paper: 1MA1/1H				
Question	**Working**	**Answer**	**Mark**	**Notes**
15 (a)		3.5 to 4.5	M1	substitution into formula $\frac{1}{3}\pi r^2 h$ of chosen values for r and V (accept $r = 5.13$ and $V = 98$) and starts rearrangement e.g. multiplies by 3, divides by π or divides by r^2 (both sides)
Q1			M1	uses estimates in calculation e.g. $\frac{3\times100}{3\times25}$ (or in rearranged formula) or $\frac{12}{\pi}$
			A1	arrives at a single value from estimate in the range 3.5 to 4.5
(b)		more	C1	ft e.g. more since number in numerator goes up; numbers in denominator go down.

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
4 (a)	Estimated value	P1	for using a rounded value in a correct process eg 3000 ÷ 15 **or** 15 × 8 **or** 20 × 8	Their rounded value must be used in a calculation Rounding may appear after a correct process eg 15.12 × 8 = 120.96 ≈ 100 followed by eg 3069.25 ÷ 100
Q2		P1	for a full process to find the number of days eg "3000" ÷ "15" ÷ "10" (= 20) **or** "3000" ÷ "15" ÷ 8 (= 25)	Accept 3069.25 ÷ 15.12 ÷ 8 oe
		A1	for a correct answer following through their rounded values	
(b)	Explanation	C1	eg less days required **or** it doesn't affect the answer because I would still round 16.27 down to 15 (or up to 20)	Refers to time taken

Paper: 1MA1/1H					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
8	(a)	75 to 81	B2	for answer in the range 75 to 81	
			(B1	for 60 **or** 100 **or** 6000 **or** 6400 **or** $\sqrt{64\times100}$)	
Q3	(b)	0.000 148	B1	for 0.000 148 oe	Can use standard form
	(c)	$\frac{1}{25}$	B1	for $\frac{1}{25}$ or 0.04	

Paper: 1MA1/3H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
10 (a)	3.0×10^9	P1	for correct process, eg $10^5 \times 365 \times 81$ or for a correct answer not written in standard form, eg 2956500000 or $2.9(565) \times 10^n$ where $n \neq 9$ oe	Values may be rounded. Allow 350, 360, 366, 370, 400 and 80, 100
Q4		A1	for an answer in the range 2.8×10^9 to 4.0×10^9	
(b)	4.5×10^{-11}	P1	for correct process, eg $\frac{90}{2 \times 10^{12}}$ **or** for correct answer not written in standard form, eg 45×10^{-12} or 0.45×10^{-10} **or** 4.5×10^n where $n \neq -11$	Allow $90 \div 2 \times 10^{12}$
		A1	cao	

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
10 (a) **Q5**	30	P1	for a start to the process, eg 5406 ÷ 6 (= 901) **or** 5400 ÷ 6 (= 900) **or** 5000 ÷ 6 (= 833.33..) **or** 5410 ÷ 6 (= 901.66..)	
		P1	for a process to find the length of one side, eg $\sqrt{"901"}$ **or** $\sqrt{"900"}$ **or** $\sqrt{"833.33.."}$ **or** $\sqrt{"901.66.."}$	
		A1	for 30	
(b)	Explanation	C1	for a correct explanation based on their working in (a), eg underestimate because I rounded the total area down	Must be based on the use of a rounded value in a calculation

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
5 (a)	16 to 20	P1	for using time = $\frac{\text{distance}}{\text{speed}}$, eg $\frac{1}{200}$ or $\frac{1}{213}$ **or** for 1 hour = 60 × 60 (= 3600) seconds	
Q6		P1	complete process, eg $\frac{1}{200} \times 60 \times 60$ oe or $\frac{1}{213} \times 60 \times 60$ oe	Calculation could be done in stages.
		A1	for answer in range 16 to 20	
(b)	decision with reason	C1	(dep on correct use of time = $\frac{\text{distance}}{\text{speed}}$) for reason related to their response to part(a), eg overestimate as speed rounded down	