Paper:	Paper: 1MA1/2H								
Questi	on	Answer	Mark	Mark scheme	Additional guidance				
8	(a)	$5.62 \times 10^{-3}$	B1	cao					
Q1	(b)	1452	B1	cao					

Paper: 1MA	Paper: 1MA1/3H							
Question	Working	Answer	Mark	Notes				
7		0.0007452	M1	digits 7452 seen				
Q2			A1	cao				

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Paper: 1MA	Paper: 1MA1/1H						
Question	Working	Answer	Mark	Notes			
8 (a)		0.00000797	B1	cao			
<b>Q3</b>		$6.3 \times 10^{7}$	M1 A1	for partial calculation involving powers of 10 e.g. $0.63 \times 10^{53}$ or $6.3 \times 10^n$ where $n \neq 7$ or for $n \times 10^8$ or for 63000000 cao			

Paper: 1MA	Paper: 1MA1/2H								
Question	Working	Answer	Mark	Notes					
10 (a)		Jupiter	B1	for Jupiter (accept $1.898 \times 10^{27}$ )					
(b)		$4.5388 \times 10^{24}$	B1	for $4.5388 \times 10^{24}$ oe (e.g. $45.388 \times 10^{23}$ )					
(c)		Yes (supported)	M1	for $(4.35 \times 10^9) \div (4.14 \times 10^7)$ (= 105(.07)) or $(4.14 \times 10^7) \times 100$ (= 4.14 × 10 <sup>9</sup> )					
Q4		<b>, 11</b>	A1	or $(4.35 \times 10^9) \div 100$ $(= 4.35 \times 10^7)$ for Yes with correct supporting evidence					

Paper: 1MA1	Paper: 1MA1/3H								
Question	Answer	Mark	Mark scheme	Additional guidance					
9 (a)	$4.52 \times 10^3$	M1	for $2.04 \times 10^7$ oe eg $2.04 \times 10^{-5} \div 10^{-12}$ or $20.4 \times 10^6$ or $204(08163.27)$ or for correct value of $T$ , $4517.(53)$ , not written in standard form, eg $4520$	May be given correct to 3 sig figs or more					
Q5		A1	for answer in the range $4.51 \times 10^3$ to $4.52 \times 10^3$ (SC B1 for $6.32\times 10^{-1}$ )						
(b)	Explanation	M1	for method to find the scale factor or decreased value in $T$ , eg $\sqrt{\frac{1.1}{1.05^3}}$ (= 0.97) oe or $\sqrt{\frac{5.6 \times 10^{-5} \times 1.1}{(1.4 \times 10^{-4} \times 1.05)^3}}$ (= 4.40× 10 <sup>3</sup> ) oe	Award mark for a correct method to calculate the scale factor or the percentage increases in $w$ and $d^3$ or the decreased value of $T$					
		C1	(dep M1) for explanation eg value of scale factor less than 1, so a decrease in $T$ <b>OR</b> compares $4.40\times 10^3$ with their value of $T$ from (a) provided answer to (a) is greater	This mark may only be awarded if supported by numerical evidence					

Paper	Paper: 1MA1/3H							
Quest	ion	Answer	Mark	Mark scheme	Additional guidance			
11	(a)	130	P1	for process to divide eg $(3.9 \times 10^7) \div (3 \times 10^5)$	Condone missing brackets			
Q	(b)	Explanation	A1 C1	Explanation referring to the time  Acceptable examples  The time will be more  It will take longer  The answer will be bigger  Not acceptable examples  The answer will be wrong  The answer will be different	Accept $1.3 \times 10^2$			

Paper: 1MA1	Paper: 1MA1/1H							
Question	Answer	Mark	Mark scheme	Additional guidance				
9	0.000672,	B2	cao	Accept correct numbers in any form				
	$67.2 \times 10^{-4}$							
07	$6.72 \times 10^5$	(B1	for correct conversions to same format, condoning one error					
Q/	$672 \times 10^4$							
			or for 3 numbers in the correct order (ignoring one)					
			or for all 4 numbers listed in reverse order)					
			of for all 1 hambers listed in reverse order)					

Paper: 1MA1	/3H			
Question	Answer	Mark	Mark scheme	Additional guidance
3 (a)	450 000	B1	cao	
(b)	$7 \times 10^{-3}$	B1	cao	
(c)	$4.73 \times 10^3$	M1	for 4730 oe <b>or</b> for $4.73 \times 10^n$ where $n \neq 3$	
		A1	cao	
Q8				
Qu				

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Paper: 1MA1	Paper: 1MA1/2H								
Question	Answer	Mark	Mark scheme	Additional guidance					
7 (a)	$8.623 \times 10^{-5}$	B1	cao						
(b) <b>Q9</b>	7.44×10 <sup>6</sup>	M1	for $\frac{3200+0.051}{0.00043}$ or $\frac{3200.051}{0.00043}$ or performs an operation eg shows 163.2, 7441860.5, 118.6() or an answer or 7.44() × 10 <sup>n</sup> where $n\neq 6$ or 7441979()	7441979.0689					
		A1	for $7.44(1979) \times 10^6$	If a correct answer is shown in working and then rounded incorrectly, award full marks.  Answer need only be given correctly to 3 sig fig; if following digits are incorrect ignore them.					

Paper: 1MA	Paper: 1MA1/2H								
Question	Answer	Mark	Mark scheme	Additional guidance					
7	$4.56 \times 10^{-2}$	M1	for 0.000000342 ÷ 0.0000075						
Q10			OR for 0.0456 oe eg $0.456 \times 10^{-1}$ or $45.6 \times 10^{-3}$ or $\frac{57}{1250}$ OR for an answer of $4.56 \times 10^{n}$						
		A1	cao						

Paper: 1MA	Paper: 1MA1/3H								
Question	Answer	Mark	Mark scheme	Additional guidance					
7 (a) (b)	$3.246 \times 10^{7}$ $0.00496$	B1 B1	cao						
(c)	No with explanation		No and explanation that B is bigger as the power of 10 is bigger.  Acceptable examples She is incorrect as 10 <sup>8</sup> is smaller than 10 <sup>9</sup> No, because B has more digits than A No, A is millions but B is billions No, if you subtract A from B the answer is positive (but if you subtract B from A the answer is negative) A= 621200000, B=4730000000, B is bigger No because she did not take into account standard form No as when you find the ordinary number B is greater than A  Not acceptable examples Yes A = 5 zeros after the number where as B = 7 zeros after the number No as 4.73×10 <sup>9</sup> is one more than 6.212×10 <sup>8</sup> 6.212 is to the power of 8 and 4.73 is to the power of 9 so there is an extra digit Asma is wrong because she has more numbers behind the decimal point which means that it will be bigger than A No B has more zeros	Decision eg "No" may be seen by the question. "She is incorrect" is equivalent to "no"					

Paper: 1MA	Paper: 1MA1/3H								
Question	Answer	Mark	Mark scheme	Additional guidance					
9 (a)	0.000675	B1	cao						
Q12	$6.592 \times 10^5$	M1	for $10.5472 \times 10^3$ oe or $1.6 \times 10^8$ oe or $2.575 \times 10^{-1}$ oe or for $6.592 \times 10^n$ where $n \neq 5$ or for $6.59 \times 10^5$ or for $6.6 \times 10^5$ or for $659200$ oe	If the answer (for 2 marks) is seen in working and then rounded or truncated, award full marks.					
		A1	cao						

Paper: 1MA1/1H				
Question	Answer	Mark	Mark scheme	Additional guidance
4 (a)	0.00163	B1	cao	
Q13 <sup>(b)</sup>	$4.38 \times 10^{5}$	B1	cao	
(c)	$2.4 \times 10^{-1}$	M1	for $4 \times 6 \times 10^{3-5}$ or 0.24 oe eg $24 \times 10^{-2}$ or $2.4 \times 10^n$ where $n \neq -1$	
		A1	cao	