Mark scheme

<table>
<tr><th colspan="3">Question</th><th>Answer/Indicative content</th><th>Marks</th><th>Guidance</th></tr>
<tr><td>1</td><td>a</td><td>i</td><td>81</td><td>2</td><td>M1 for 3 × 3 × 3 × 3</td><td>May be completed in stages</td></tr>
<tr><td></td><td></td><td>ii</td><td>4</td><td>1</td><td></td></tr>
<tr><td></td><td>b</td><td></td><td>[p=] –2</td><td>2</td><td>B1 for 2^{-1} or answer 2^{-2}
or
M1 for $[2^p =] \frac{1}{4}$

or 2^{p+1}
or for $p + 1 = -1$
oe</td></tr>
<tr><td></td><td></td><td></td><td>Total</td><td>5</td><td></td></tr>
<tr><td>2</td><td>a</td><td></td><td>$\frac{11}{15}$ oe</td><td>2</td><td>M1 for $\frac{5k}{15k} + \frac{6k}{15k}$</td><td>Where k is an integer ≥ 1
isw attempts to convert after the correct answer seen</td></tr>
<tr><td></td><td>b</td><td></td><td>$\frac{27}{35}$ cao</td><td>2</td><td>M1 for
$\frac{54}{70}$ oe</td><td>e.g. $\frac{5400}{7000}$ for M1</td></tr>
<tr><td></td><td></td><td></td><td>Total</td><td>4</td><td></td></tr>
<tr><td>3</td><td>a</td><td></td><td>
<table>
<tr><th>Number</th><th colspan="2">… as a power of 3</th></tr>
<tr><td>9</td><td>3 × 3</td><td>3^2</td></tr>
<tr><td>81</td><td>3 × 3 × 3 × 3</td><td>3^4</td></tr>
<tr><td>729</td><td>3 × 3 × 3 × 3 × 3 × 3</td><td>3^6</td></tr>
</table>
</td><td>2</td><td>B1 for 3^4
B1 for 3^6
or
B1 for 3 × 3 × 3 × 3 or 3 × 3 × 3 × 3 × 3 × 3</td></tr>
<tr><td></td><td>b</td><td></td><td>3^{30}</td><td>1</td><td></td></tr>
</table>

			Total	**3**		
4	a		1.204×10^{-2}	1		
	b		8.97×10^{3}	4	**B3** for 8970 or **B2** for figs 897 or M2 for $\frac{1.495\times10^{11}\times 6\times10^{-5}}{1000}$ oe or **M1** for $1.495 \times 10^{11} \times 6 \times 10^{-5}$ **oe**	May be in stages May be seen as product of two st form numbers converted
			Total	**5**		
5		i	4096	1		
		ii	19	1		Accept ± or – or + before 19
			Total	**2**		
6			36	1		
			Total	**1**		
7	a		$\frac{2}{15}$	2	**M1** for $\frac{5}{15}$ or $\frac{7k}{15k}-\frac{5k}{15k}$ or $\frac{2k}{15k}$	e.g $\frac{21}{45}-\frac{15}{45}$
	b		$\frac{2}{3}$	3	**B2** for $\frac{56}{84}$ **oe** fraction or $\frac{1}{3}\times\frac{2}{1}$ or **M1** for $\frac{7}{12}\times\frac{8}{7}$ or $\frac{1}{\frac{12}{8}}$ or $\frac{1}{\frac{3}{2}}$	**isw** attempts to convert after correct answer seen e.g. $0.\dot{6}$

					If **0** scored, award **SC1** for converting the fractions to a common denominator $\frac{14k}{24k} \div \frac{21k}{24k}$ e.g. $\frac{14}{24} \div \frac{21}{24}$ or $\frac{14}{24}$ and $\frac{21}{24}$
			Total	**5**	
8	a		8	1	
	b		6	1	
			Total	**2**	
9	a	i	32	2	M1 for 2 × 2 × 2 × 2 × 2 × 2 May be completed in stages **Examiner's Comments** Many candidates successfully answered this question correctly. Most of those who were successful wrote out the calculation 2 × 2 × 2 × 2 × 2 = 32 in full. Those who scored 1 mark wrote out the calculation correctly, but incorrectly evaluated it (e.g. 2 × 2 × 2× 2 × 2 × 2 = 64). A common misconception that resulted in no marks was to calculate 2 × 2 = 4 and then multiply this by 2 a further 5 times, thus calculating 2^6 rather than 2^5. Another common misconception was that $2^5 = 10$.
		ii	10	1	**Examiner's Comments** Many candidates did not answer this correctly. A common error was to consider $\sqrt[3]{1000}$ as short division rather than a cube root, leading to 333[....].

					Other incorrect answers included 100, 300 and 3000.
	b		[p=] –2	2	**B1** for 5^{-1} or answer 5^{-2} or **M1** for $[5^p =] \frac{1}{25}$ or 5^{p+1} or for $p + 1 = -1$ **oe** **Examiner's Comments** Many did not answer this question correctly. Those who attempted the question often converted $\frac{1}{5}$ to 0.2, which then made further progress more challenging. Candidates who were successful were able to link $\frac{1}{5}$ to 5^{-1}. Those who did this yet could not link $5^p \times 5$ to $5^p \times 5^1$ scored 1 mark.
			Total	**5**	
10	a		$\frac{13}{21}$ oe	2	**M1** for $\frac{7k}{21k} + \frac{6k}{21k}$ Where k is an integer ≥ 1 isw attempts to convert after the correct answer seen **Examiner's Comments** Many candidates successfully answered this question. Most found a correct common denominator (generally 21). A small number of candidates made arithmetic errors in finding the numerator of one or both fractions, or in adding together the numerators. Lower performing

					candidates just added the numerators and denominators to get $\frac{3}{10}$.
	b		$\frac{7}{16}$ cao	2	**M1** for $\frac{35}{80}$ o.e e.g. $\frac{2800}{6400}$ for M1 **Examiner's Comments** Many candidates scored at least 1 mark on this question, with many scoring full marks. Most showed the multiplication of the denominator and numerator to achieve $\frac{35}{80}$ (or equivalent) for M1. Some candidates however incorrectly simplified this, or did not simplify. Lower performing candidates found common denominators and then multiplied the numerators, or used methods associated with division of fractions.
			Total	**4**	
11	a		<table><tr><th>Number</th><th colspan="2">... as a power of 2</th></tr><tr><td>4</td><td>2 × 2</td><td>2^2</td></tr><tr><td>16</td><td>2 × 2 × 2 × 2</td><td>2^4</td></tr><tr><td>64</td><td>2 × 2 × 2 × 2 × 2 × 2</td><td>2^6</td></tr></table>	2	**B1** for 2^4 **B1** for 2^6 OR **B1** for 2×2×2×2 or 2×2×2×2×2×2 **Examiner's Comments** Candidates answered this well. Less successful responses were 16, 16 × 4, or other answers involving 8 and/or 32.
	b		2^{40} cao	1	**Examiner's Comments** Only a small proportion of candidates could translate the patterns of part (a) into an answer here. A few candidates wrote long products such as 2 × 2 × 2 × 2 × 2 × 2... and a few reached the

					correct answer. A number of solutions included 2^{10} and some very long numbers. A significant number of candidates did not attempt a solution.
			Total	**3**	
12	a		1.025×10^{-3}	1	**Examiner's Comments** Most candidates attempted to answer this question and a reasonable number gained the mark. There was no discernible pattern to the incorrect answers, although 1.025×10^{3} , 1025×10^{-6} , 1.025×10^{-6} and $\frac{41}{40000}$ were seen.
	b		9.93×10^{4}	4	**B3** for 99 300 or **B2** for figs 993 or **M2** for $\frac{1.655 \times 10^{12} \times 6 \times 10^{-5}}{1000}$ oe or **M1** for $1.655 \times 10^{12} \times 6 \times 10^{-5}$ oe May be in stages May be seen as product of two st form numbers converted **Examiner's Comments** This was often omitted and was not answered well by those who attempted it. Only a few candidates scored marks here. Those who responded often realised they had to multiply the mass of a raindrop by the number of raindrops, with some reaching an answer with the digits 993. A lot of candidates attempted to convert the standard form numbers into ordinary numbers and combine them, but then seemed unsure how to proceed (likely due to the size of the

					figures they arrived at). The responses seen suggested that most candidates did not know how to use their calculator to work with the standard form numbers. Few candidates realised that a conversion from grams to kilograms was necessary, but those that did sometimes multiplied by 1000. **Key point** Candidates will benefit from being able to use their calculators efficiently, including with standard form.
			Total	**5**	
13			[m =] $^{-}7$	2	**B1** for 3^{-1} or **M1** for 3^{6+m} or $6 + m = {}^{-}1$ **oe**
			Total	**2**	
14			64	2	**B1** for $2 \times 2 \times 2 \times 2 \times 2 \times 2$ **soi** | e.g. $2^3 \times 2^3$ or 8×8 or $4 \times 4 \times 4$
			Total	**2**	
15		i	1296	1	**Examiner's Comments** This was almost always correct, though a very few gave responses such as 10, 18, 24, 72 or another number.
		ii	23	1	Accept ± or – or + before 23 **Examiner's Comments** This was often correct. There was no

					clear pattern to the few wrong answers.
			Total	**2**	
16	a		$\frac{3}{16}$	2	**M1** for $\frac{4}{16}$ or $\frac{7k}{16k} - \frac{4k}{16k}$ or $\frac{3k}{16k}$ | e.g $\frac{28}{64} - \frac{16}{64}$ **Examiner's Comments** A large number of candidates attempted this question. There was however slightly lower success in this question compared to fraction subtraction questions in previous series, which could be partially because of the request for simplest form this year. A number of candidates understood a common denominator was required, but they often did this by attempting to transform both fractions (mostly to a denominator of 64). Responses were then frequently not cancelled to the correct simplest form, so M1 was given many times. Poorer responses gave $\frac{6}{12}$ or equivalent as their final response. **Assessment for learning** When fractions need to have a common denominator, students should review them first to see if both need to be transformed, or if it can be done by just transforming one of them. This can both save students time and reduce the likelihood of errors being made.
	b		$\frac{3}{4}$	3	**B2** for $\frac{45}{60}$ oe fraction or $\frac{1}{4} \times \frac{3}{1}$ or | isw attempts to convert after correct answer seen e.g. 0.75

					M1 for $\frac{5}{12} \times \frac{9}{5}$ or $\frac{1}{\frac{12}{9}}$ or $\frac{1}{\frac{4}{3}}$ If 0 scored, award **SC1** for converting the fractions to a common denominator $\frac{15k}{36k}$ $\frac{20k}{36k}$ e.g. $\frac{15}{36}$ $\frac{20}{36}$ or $\frac{15}{36}$ and $\frac{20}{36}$ **Examiner's Comments** A number of candidates struggled with this question. Some of those unsure how to divide fractions were able to access the SC1 mark for correctly converting to a common denominator. Those who did have an appropriate method almost always showed the change from division to multiplication and the reciprocal of the second fraction. However, a number who divided correctly did notthen simplify; $\frac{45}{60}$ or an equivalent fraction was often seen as the response, which was given B2. Very few candidates cancelled common factors before multiplying the fractions.
			Total	**5**	
17	a		7	1	**Examiner's Comments** This was answered very well by most. If an incorrect response was seen, it was generally 6^{12}. A few candidates attempted to find the actual product of 63 and 64 or wrote out 6 × 6 × 6 × 6 × 6 × 6 × 6.
	b		8	1	**Examiner's Comments** Candidates were less successful here than in part (a). The common incorrect

					response was 2^6. When the correct answer was seen, it was almost given without working and so was presumably a mental calculation.  **Assessment for learning** When teaching indices, the aim should be for understanding rather than 'rules' to apply. e.g. $(2^4)^5 = 2^4 \times 2^4 \times 2^4 \times 2^4 \times 2^4$ This can help reduce memory burden and confusion between the rules, as well as further building the skill used in part (a) (which candidates showed a strong competency in). Additionally, it will help with more challenging questions, e.g. $(3x^3)^4$.
			Total	**2**	
18			16	1	**Examiner's Comments** Response to this question varied, but were often incorrect. Responses of $^{-}16$, $^{-}8$ and 8 were very common. Candidates continue to demonstrate a lack of knowledge with powers in this context. Very few candidates showed they understood that the question was asking $^{-}4 \times {}^{-}4$.
			Total	**1**	
19	a		"one hundred thousand[s]" or "a hundred thousand[s]"	2	**B1** for 100 000 seen or answer 100 thousand or answer 100 times a thousand Accept reasonable spelling Answer Ten to the power 5 scores 0
	b		$2.7[0] \times 10^2$	2	

					B1 for correct answer but not standard form or [0].27 or [1000 =] 10^3	For B1 e.g. 0.27 × 10^3, 270 × 10^0 etc
			Total	**4**		
20	a	i	4	1		
		ii	3	1		
	b		[±]45	3	**B1** for 9 **B1** for [±]5	Not embedded e.g. 5 × 5 = 25
			Total	**5**		
21	a		1.42 ×10^5	4	**B3** for 142 000 or 142 × 10^3 oe or 1.4 × 10^5 Or **B2** for 142 300 or 1423 × 10^2 oe Or **M1** for figs 131 + figs 113 If 0 scored **SC1** for *their* value correctly rounded to 3sf	Addition may be implied by figs 142 or 1423. Must clearly be *their* answer from attempt at addition The unrounded value must be seen
	b		$\frac{1.41\times10^9}{1.13\times10^4}$ 1.24 × 10^5 or 124 000 to 124 779 OR 1.13 × 10^4 × 125 000 1.412(5) × 10^9 or 1 412 000 000 to 1 413 000 000 OR $\frac{1.41\times10^9}{125000}$ 1.1 × 10^4 or 11 000	M1 A1 M1 A1 M1 A1		Accept in ordinary numbers e.g. $\frac{1410000000}{1130}$

			Total	**6**		
22	a		9.3×10^{-1}, 6.4×10^{1}, 3.5×10^{2}, 1.2×10^{3}	1		Mark the answer line and look for order of indices $^{-}1$, 1, 2, 3 Condone TE if unambiguous If answer given as ordinary numbers must be correct 0.93, 64, 350, 1200
	b		5.4×10^{3}	2	**B1** for 5400 or for 400 and 5000	For **B1** accept poor form e.g. 54×10^{2}
			Total	**3**		
23	a		$\sqrt{36} = 6$ or $6^2 = 36$ 3	M1 A1	If **0** scored, **SC1** for answer 3 with no or confused or insufficient working	Ignore other correct roots e.g. $\sqrt{25} = 5$ unless these used to reach answer. Must just be 3
	b		It would not change **oe**	1		The square root symbol only gives the positive root, so no change **oe**
			Total	**3**		
24			$\frac{1}{3}$	3	**B1** for $[\sqrt[3]{27} =]3$ **B1** for $[(\frac{1}{3})^2 =]\frac{1}{9}$ **oe**	$\frac{3}{9}$ scores **B1B1**
			Total	**3**		

25	a	i	256	1	
		ii	15	1	
	b		5 or $y = 5$ final answer	2	**M1** for $972 \div 4$ may be implied by 243 or 3^5 or $972 = 4 \times 3^5$
	c		$\frac{1}{6}$ **oe** fraction	1	
			Total	**5**	
26	a		3	1	
	b		$^{-}2$	1	
			Total	**2**	
27	a		-4	1	
	b		72	3	**B1** for [$\sqrt{64}$ =] 8 **B1** for [3^2 **oe** =] 9 For **3** marks condone ±72 or $^{-}72$ For **B1** condone ±8 or -8
			Total	**4**	
28			625	1	
			Total	**1**	
29			[m =] $^{-}8$	2	**B1** for 2^{-1} or **M1** for $2^7 + m$ or $7 + m = -1$ oe **Examiner's Comments** Candidates very rarely recognise that this question was a negative indices

					question and that changing the $\frac{1}{2}$ to 2^{-1} was needed. Many did not respond and most of those that did made an attempt to evaluate 2^7.
			Total	**2**	
30			81	2	**B1** for 3 × 3 × 3 × 3 soi | e.g. $3^2 \times 3^2$ or 9 × 9 **Examiner's Comments** Candidates were highly successful in this question, with correct responses frequently seen. Candidates that gave a correct answer often wrote 3 × 3 × 3 × 3 in the space provided. The most common error was to work out 3^5, even after writing 3 × 3 × 3 × 3 (seemingly considering the first calculation of 3 × 3 as a single '3'). Some candidates struggled to multiply numbers by 3, even when using column multiplication. Very rarely was the common error '3 × 4 = 12' seen.
			Total	**2**	
31	a		4.9×10^{-1}, 9.5×10^{1}, 2.4×10^{2}, 1.3×10^{3},	1	Mark the answer line and look for order of indices −1, 1, 2, 3 Condone TE if unambiguous If answer given as ordinary numbers must be correct 0.49, 95, 240, 1300 **Examiner's Comments** Many correct answers were seen to this question. A common error was to have two of the values in the wrong

					order, or to go from largest to smallest.
	b		4.5×10^3	2	**B1** for 4500 or for 500 and 4000 For B1 accept poor form e.g. 45×10^2 **Examiner's Comments** This question was also well done, with two thirds of candidates scoring marks. The common error was to give the answer 4500 or 45×10^2. Some candidates wrote 500 + 4 + 1000, misusing the second standard form number.
			Total	**3**	
32	a		$\sqrt{16} = 4$ or $4^2 = 16$ 2	M1 A1	If 0 scored, **SC1** for answer 2 with no or confused or insufficient working Must just be 2 Ignore other correct roots e.g. $\sqrt{9} = 3$ unless these used to reach answer. **Examiner's Comments** Only the strongest candidates scored marks on this question. For those that didn't make the connection that *b* was a square number, substitution of values for b from 8 to 17 should have been an achievable way forward, however few did this successfully. A number of candidates got as far as $\sqrt{16} = 4$, but then concluded that 8 was

					the value of a. 4 was also a very common wrong answer. Around 40% of candidates made no attempt to answer the question.
	b		It would not change oe	1	The square root symbol only gives the positive root, so no change oe **Examiner's Comments** Almost all answered this question incorrectly.
			Total	**3**	
33			1	3	**B1** for $[\sqrt[3]{64} =] 4$ **B1** for $[(\frac{1}{2})^2 =] \frac{1}{4}$ oe $\frac{4}{4}$ scores B1B1 **Examiner's Comments** Candidates struggled in numerous ways to access this question. Often candidates carried out $\sqrt{64}$ and not $\sqrt[3]{64}$, arriving at 8 instead of 4. Some candidates worked out $\frac{64}{3}$. A number of candidates converted $\frac{1}{2}$ to 0.5, but then calculated 0.52 to be 2.5 rather than 0.25. Others stated $\frac{1}{2} \times \frac{1}{2} = 1$. The mark given most often was B1 for $\sqrt[3]{64} = 4$. Those candidates that stated $4 \times \frac{1}{4}$ almost always gave the correct answer. There was a high number of candidates who did not attempt this question.

			Total	**3**	
34	a	i	243	1	**Examiner's Comments** This question was well answered, suggesting efficient use of a calculator.
		ii	14	1	**Examiner's Comments** This part of the question proved to be more challenging. A common error was to use square root rather than cube root and sometimes multiplying the result by 3 to arrive at 157.149. An answer of $42\sqrt{14}$ was also quite common.
	b		3 or $y = 3$ final answer	2	**M1** for 384 ÷ 6 may be implied by 64 or 4^3 or $384 = 6 \times 4^3$ **Examiner's Comments** The majority of candidates obtained at least 1 mark, usually for 384 ÷ 6 if they didn't go on to get both marks. Further division by 4 gave a common incorrect response of 16. A significant number carried out 6 × 4 as a first step.
	c		$\frac{1}{3}$ oe fraction	1	**Examiner's Comments** Many correct answers were seen for

					this question. The common errors were $\frac{33}{100}$, $\frac{3}{10}$ and 0.333.
			Total	**5**	
35	a		"ten thousand[s]" cao	2	**B1** for 10 000 seen or answer 10 thousand or answer 10 times a thousand Accept reasonable spelling Answer Ten to the power 4 scores 0 **Examiner's Comments** Many correct answers were seen, and many did not write 10 000 as part of their working. Stating 10^4 as 10 000 and not in words gained 1 mark. A reasonably common wrong response was 'Ten to the power four'.
	b		$3.5 \times 10^{[1]}$	2	**B1** for correct answer but not standard form or [0].35 or [100 =] 10^2 For B1 e.g. 0.35×10^2, 35×10^0 etc **Examiner's Comments** The most common response was 35, which gained B1 as it was not in standard form. Workings which included 0.35 appeared sometimes and were also given B1.
			Total	**4**	
36	a	i	3	1	
		ii	4	1	

					Examiner's Comments These questions were well answered by most candidates, with the large majority getting the correct answer to (a) (i). Candidates incorrectly answering (a) (ii) gave 8.
	b		[±]150	3	**B1** for 25 **B1** for [±]6 Not embedded e.g. 6 x 6 = 36 **Examiner's Comments** Most candidates were able to calculate the value of 5^2 or the value of $\sqrt{36}$, scoring at least one method mark. Several candidates incorrectly gave 10 for 5^2. A small number of candidates wrote down that $\sqrt{36} = 6 \times 6$ but then used 36 in their calculation, so 25 × 36 was often seen.
			Total	**5**	
37	a		1.31×10^5	4	**B3** for 131000 or 131×10^3 oe or 1.3×10^5 or $1.30[8] \times 10^5$ or **B2** for 130800 or 1308×10^2 oe or **M1** for figs 119 + figs 118 Addition may be implied by figs 131 or 1308, Must clearly be their answer from attempt at addition If 0 scored **SC1** for *their* value correctly rounded to 3 sf The unrounded value must be seen **Examiner's Comments** 130800 was a very common interim or final answer but many candidates then struggled to round to 3 sf and put this into standard form – some could do

					one of these steps but very few could do both correctly. Most candidates changed the two populations into ordinary form, often correctly, but then frequently made an error in column alignment when adding. The few candidates who stayed in standard form were generally more successful. Candidates should be encouraged to use their calculator to answer questions of this type.
	b		$\frac{1.44\times10^9}{1.18\times10^4}$ 1.22×10^5 or 122 000 to 122 034 OR $1.18 \times 10^4 \times 120\,000$ 1.416×10^9 or 1416000000 to 1420000000 OR $\frac{1.44\times10^9}{120000}$ 1.2×10^4 or 12000	M1 A1 M1 A1 M1 A1	Accept in ordinary numbers e.g. $\frac{1440000000}{11800} =$ **Examiner's Comments** Most converted the values into ordinary form, often stopping at this point with no further processing. The second method on the mark scheme was the most frequently seen and the most successful ($1.8 \times 10^5 \times 120\,000$). This was followed by the first method (population of China ÷ population of Tuvalu). There were only a few instances of the third method occurring (population of China ÷ 120 000). Subtraction rather than division in the first method was common.
			Total	**6**	
38	a		6	1	**Examiner's Comments** A number of candidates did not attempt this question. Some correct answers were seen and some wrote one million as 1 000 000 before answering. Incorrect answers were 7, 10, 100 and 1 000 000 (and ✓)
	b		−3	1	**Examiner's Comments**

					More candidates attempted this question but fewer correct answers were seen. By far the most common answer was 3.
			Total	**2**	
39	a		5120	1	**Examiner's Comments** This was the first of the questions common with the corresponding Higher tier paper (J560/06). Here in the Foundation paper many answered parts (a) and (b) correctly and also scored some marks on (c). **Misconception** Some candidates thought that the index indicated the number of zeros in the answer.
	b		Topozero, Tana, Mweru, Ladoga, Victoria or 986, 3200, 5120, 18 100, 68 900 oe in standard form	2	**B1** for Topozero as smallest or Victoria as largest or all in correct reverse order 9.86 × 10^2, 3.20 × 10^3, 5.12 × 10^3, 1.81 × 10^4, 6.89 × 10^4 condoning superfluous zeros and slip in index
	c		1.5 × 10^4 nfww isw	4	**B3** for 15 000 oe or 1.49[0..] × 10^4 or **B2** for 14 900 oe or **M1** for figs 181 – figs 32 e.g. 15 000 may be 15 × 10^3 Subtraction may be implied e.g. by figs 15 or figs 149 If 0 scored **SC1** for *their* value correctly rounded to 2 significant figures *Their* unrounded value must be seen **Examiner's Comments** Many scored the first mark for subtracting the correct values, but very few correctly rounded to 2 significant figures and even fewer wrote this in standard form correctly. A number attempted to subtract the

					standard form numbers in the wrong order.
			Total	**7**	
40			1024	1	
			Total	**1**	
41	a		$^{-}3$	1	**Examiner's Comments** The correct answer in this part was only very rarely seen.
	b		72	3	**B1** for $[\sqrt{81} =] 9$ **B1** for $[2^3$ **oe** $=] 8$ For 3 marks condone ±72 or −72 For B1 condone ±9 or −9 **Examiner's Comments** A wide range of responses were given, including some candidates stating 3 even though many of these went on to correctly identify 2^3 as 8 in this part. This last part was far more successful. Candidates seemed solidly prepared on squares, cubes and roots. Where candidates didn't achieve full marks a very large proportion gained at least 1 mark for either $\sqrt{81} = 9$ or, more commonly, $23 = 8$. A common error was $81 \times 8 = 648$, which did gain 1 mark. Some candidates made a computational error when attempting $9 \times 2 \times 2 \times 2$, if they hadn't calculated 2^3 as 8 separately.
			Total	**4**	