

Integers, HCF/LCM, Prime numbers, Sig Figs, Dec Places

Mark Scheme 2

Level	IGCSE
Subject	Maths (0580)
Exam Board	Cambridge International Examinations (CIE)
Paper Type	Extended
Topic	Number
Sub-Topic	Integers, HCF/LCM, Prime numbers, Sig Figs, Dec Places
Booklet	Mark Scheme 2

Time Allowed: 70 minutes

Score: /58

Percentage: /100

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%



1	<p>(a) 211 cao</p> <p>(b) 216 cao</p>	1	
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2	<p>(a) (i) $2 \times 3 \times 3 \times 7$ oe</p> <p>(ii) 18</p> <p>(iii) 504</p> <p>(b) 3.028 or 3.029 cao</p> <p>(c) πr^2 their $h =$ their V</p> <p>$(r^2 =) \frac{\text{their } V}{\pi \times \text{their } h}$</p> <p>Sq root</p> <p>Selects 555 or 554.99.. and 11.5</p> <p>3.919 cao</p>	2	<p>M for prime factors of 2,3,3,7 shown condone 1('s) shown as well for method only</p> <p>1</p> <p>2 M1 for other multiples of 504 or $2 \times 2 \times 2 \times 3 \times 3 \times 7$ oe shown If (ii) and (iii) both correct but reversed allow SC1</p> <p>4 B3 for 3.0289(85...) or M1 for their 105/their 34 (their 105 in range 104 to 106 and their 34 in range 33 to 35) and B1 for 104.5 or 34.5 or 34.499.. selected</p> <p>M1 Where V is in range 540 to 560 and h is in range 11 to 13</p> <p>M1 Implies previous method (15.36 implies M2) If using 545 and 12.5 then 13.88 (leading to 3.73) If using 550 and 12 then 14.59 (leading to 3.82)</p> <p>M1 Dep on M2, can be implied from answers</p> <p>B1 Indep</p> <p>A1 If trials then 5 or 0</p>
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3	47, 53	2	B1, B1 independent
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4	(a)	(i) 25 (ii) 15.5 (15.46 to 15.47) (iii) 0.05 oe	1 1 2	B1 for 1/100 or 0.01 seen
	(b)	8812.50 final answer	3	Condone 8812.5 M2 for $7500 \times 5 \times 0.035 + 7500$ oe (implied by final answers 8810, 8812, 8813 or 8812.5(0) seen) or B2 for 1312.5 as final answer or M1 for $7500 \times 5 \times 0.035$ oe (implied by final answers 1310, 1312, 1313)
	(c)	(i) $2^2 \times 3 \times 5$ (ii) 12 (iii) 240	2 2 2	Allow $2 \times 2 \times 3 \times 5$ M1 for any correct <u>product</u> of 3 factors = 60 seen or correct factor ladder or correct tree (condone 1's on tree/ladder) M1 for $2^2 \times 3$ or $2 \times 2 \times 3$ oe M1 for $2^4 \times 3 \times 5$ or $2 \times 2 \times 2 \times 2 \times 3 \times 5$ oe SC2 only for both correct answers (ii) (iii) reversed

5	(a)	6.58×10^{-3}	1	\times and 10 essential
	(b)	0.00 <u>66</u> cao	1	Allow 6.6×10^{-3}

6	44	2	M1 97 or 53 seen
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7	650		M1 $\frac{600}{2.4}$ ($\times 2.6$)
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8	53 and 59	1, 1	independent of each other
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9	(a) 1045.28 cao	1	Allow 1.0×10^3
	(b) <u>1000</u>	1	

10	(a) any non square $\sqrt{\quad}$ or π or e	1	$\sqrt{5}$ but not $\sqrt{9}$. $\sqrt{2/3}$ is OK, $\sin 20$ etc but not $\sin 30$ No fractions, decimals or root of negatives allow 61 and 67 but no other pairs
	(b) 61 or 67	1	

11	97 cao	1	
12	(a) (-)590	1	
	(b) Neptune	1	

13	(a) 238 <u>0</u>	1	
	(b) 2381.6 <u>0</u>	1	
	(c) 2400	1	

14	(a) $\sqrt{16}$ or $65/13$	1	Allow 4 or 5 Not $22/7$
	(b) π or $\sqrt{14}$	1	

15	(a) 80000	1	8×10^4
	(b) 8×10^4	1 \checkmark	

16	(-)4504		Allow (-)4500
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17	(a) $-1, \sqrt{36}$ (b) $\sqrt{2}, \sqrt{30}$	1 1	Allow $-1, \pm 6$ SC1 (a) -1 and (b) $\sqrt{36}, \sqrt{2}, \sqrt{30}$
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18	(a) 4 (b) 4.5	1 1	Allow - 4 Allow - 4.5
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