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MARK SCHEME
Maximum Mark: 96

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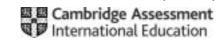
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MARK SCHEME NOTES

The following notes are intended to aid interpretation of mark schemes in general, but individual mark schemes may include marks awarded for specific reasons outside the scope of these notes.

Types of mark

- M Method marks, awarded for a valid method applied to the problem.
- A Accuracy mark, awarded for a correct answer or intermediate step correctly obtained. For accuracy marks to be given, the associated Method mark must be earned or implied.
- B Mark for a correct result or statement independent of Method marks.

When a part of a question has two or more 'method' steps, the M marks are in principle independent unless the scheme specifically says otherwise; and similarly where there are several B marks allocated. The notation 'dep' is used to indicate that a particular M or B mark is dependent on an earlier mark in the scheme.

Abbreviations

awrt answers which round to cao correct answer only

dep dependent

FT follow through after error isw ignore subsequent working nfww not from wrong working

oe or equivalent

rot rounded or truncated

SC Special Case soi seen or implied

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Question	Answer	Marks	Partial Marks
1(a)(i)	783	2	M1 for 280 × 1.50 or 330 × 1.10 soi by 420 or 363
1(a)(ii)	96	1	
1(a)(iii)	80	1	
1(b)	12	2	M1 for $\frac{15}{1.2}$ oe soi by 12.5
	[0].6[0]	1	
1(c)	120	2	M1 for 600 × 0.04 [× 5] oe or [600 ×] 0.04 × 5
2(a)(i)	9 × 35 [= 315]	1	
2(a)(ii)	36	2	M1 for 315 + 45 oe
2(b)	24	2	M1 for $\frac{72}{5+4+3}$ soi by 6
3(a)(i)	3562.85	1	
3(a)(ii)	3560	1	
3(a)(iii)	3600	1	
3(b)	-25	2	B1 for –24.9 or –24.86 to –24.85
3(c)	12.5	1	
3(d)	19 50	2	B1 for $\frac{38}{100}$
3(e)	3, 7, 9, 21	2	B1 for 2 correct factors in any order
3(f)	0.5^2 , 55%, 0.59, $\frac{3}{5}$ oe	2	B1 for 3 in the correct order
4(a)(i)	1 or 7 or 9 or 27	1	
4(a)(ii)	1 or 9	1	
4(a)(iii)	7	1	
4(b)(i)	$\frac{3}{10}$ oe	1	
4(b)(ii)	0	1	
4(b)(iii)	$\frac{5}{10}$ oe	1	

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Question	Answer	Marks	Partial Marks
5(a)(i)	50	1	
5(a)(ii)	30	1	
5(b)	46.25	2	M1 for at least 2 of $30 \times 9 + 40 \times 5 +$ soi by 1110
5(c)	Correct bars	2	B1 for 2 or 3 correct bars
6(a)	Correct pattern	1	
6(b)	5, 7, 9	2	B1 for 2 correct
6(c)	2n-1 oe	2	M1 for $2n - k$ or $kn - 1$
6(d)	35	2	FT their (c) M1 for substituting 18 in their (c)
7	[<i>p</i>] = 48	1	
	[q] = 30	1	
	[r] = 29	1	
	[s] = 61	1	
	[t] = 47	1	
8(a)	80 140 260 320	2	B1 for 2 or 3 correct
8(b)	Correct curve drawn	2	FT from (a) but only if numbers are increasing
			B1FT for 2 points plotted correctly
8(c)(i)	54 to 56	1	FT their curve
8(c)(ii)	22 to 26	2	M1 for 66 to 68 or 42 to 44 seen
8(c)(iii)	400 – their cf value	2	FT B1 for <i>their</i> cf value
9(a)	220	1	
9(b)	346 or 345.5 to 345.6	2	M1 for $\pi \times 220$ [÷ 2] soi
9(c)	726 or 725.5 to 725.6	1	FT 380 + <i>their</i> (b)
9(d)	9.67 or 9.68 or 9.673 to 9.676	2	M1 for $\frac{\text{distance}}{\text{speed}}$

Question	Answer	Marks	Partial Marks
9(e)	36 600 to 36 610	3	M2 for $220 \times 80 + 0.5 \times \pi \times (0.5 \times 220)^2$ or M1 for 220×80 or $0.5 \times \pi \times (0.5 \times 220)^2$
10(a)	Correct sketch	4	B1 for 150° correct B1 for 225 m and B marked B1 for 60° correct B1 for 270 m and C marked
10(b)	351 or 351.4 to 351.5	2	M1 for $225^2 + 270^2$
10(c)	[0]99.8 or [0]99.80 to [0]99.81	3	M1 for tan[] = $\frac{270}{225}$ oe M1 for subtracting answer from 150
11(a)	-4	2	M1 for correct first step
11(b)	$x^2 + 2x - 3$ final answer	2	M1 for $x^2 + 3x$ or $-x - 3$
11(c)	$xy(xy^2-3)$ final answer	2	M1 for $x(xy^3 - 3y)$ or $y(x^2y^2 - 3x)$
11(d)(i)	8	1	
11(d)(ii)	16	1	
11(e)	<u>y</u> 15	2	M1 for both fractions written with denominator 15k or better
12(a)	Correct sketch	2	M1 for correct shape
12(b)(i)	(-1.5, 0) (2, 0)	2	B1 for each
12(b)(ii)	(0, -9)	1	
12(c)	(0.25, -9.19) or (0.25, -9.188 to -9.187)	2	B1 for x co-ordinate B1 for y co-ordinate
12(d)	-1.92 or -1.925 to -1.924	1	
	2.42 or 2.424 to 2.425	1	