Mark scheme

Rounding and estimation

Mathematics 0580 · Questions from Paper 1, Paper 2 and Paper 3

Total marks

24

MARKS FOR EACH QUESTION

1	2	3	4	5	6	7	8	9	10	Total
2	2	2	2	2	2	2	2	3	5	**24**

Question 1 [2]

1	**(a)**	1426.31 cao	**1**	
	(b)	1400 cao	**1**	

Question 2 [2]

2	**(a)**	15.1 cao	**1**	
	(b)	20 cao	**1**	

Question 3 [2]

3(a)	0.076 cao	**1**	
3(b)	10 000 cao	**1**	

Question 4 [2]

4	5.51×10^3	**2**	**B1** for 5.508×10^3 or figs 551 or 5.5×10^3

Question 5 [2]

5	32 800 cao	**2**	**B1** for 32 768 or *their* answer of more than 3 figures correctly rounded to 3 sf

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Question 6 **[2]**

6	**(a)**	$\frac{5\times 2}{20}$	**1**	
	(b)	0.5 or $\frac{1}{2}$ cao	**1**	

Question 7 **[2]**

7(a)	70×20 and 1400	**1**	
7(b)	Less than [because] both values rounded down oe	**1**	If zero scored, **SC1** for answer of 73×20 and 1460 in **(a)** with Less than [because] the cost of the book is rounded down oe

Question 8 **[2]**

8	$\frac{40\times 3}{20-4^2}$	**M1**	Allow **M1** for 3 out of 4 values correctly rounded or for all correct but with any trailing zeros
	30 cao	**A1**	**Dep on M1** with no errors or trailing zeros

Question 9 **[3]**

9	5 with 2, 10 and 8 shown	**3**	**B2** for $\sqrt{\frac{200}{8}}$ or better or **M1** for two of 2, 10 or 8

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Question 10 **[5]**

10(a)	184 with 3, 8 and 10 shown	**3**	**B1** for 3, 8 and 10 **M1** for $3 \times 8 + 2 \times 8 \times 10$ or for correct substitution of unrounded, truncated or incorrectly rounded values
10(b)	$[m =] \ \frac{b}{d+2k}$ final answer	**2**	**M1** for $[b =] \ m(d + 2k)$

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