

Bounds

Mark Scheme 1

Level	IGCSE
Subject	Maths (0580)
Exam Board	Cambridge International Examinations (CIE)
Paper Type	Extended
Topic	Number
Sub-Topic	Bounds
Booklet	Mark Scheme 1

Time Allowed: 60 minutes

Score: /50

Percentage: /100

Grade Boundaries:

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

1	28.35 cao	2	B1 for 9.45 seen or M1 for $(9.4 + 0.05) \times 3$
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2	$\frac{11}{30}$ cao	3	B2 for $\frac{33}{90}$ oe as final answer or M1 for $36.\dot{6} - 3.\dot{6}$ or $36.6^r - 3.6^r$ oe or B1 for $\frac{k}{90}$
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3 (a)	10.4675 cao nfw	2	B1 for 3.95 or 2.65 seen or M1 for $(4.0 - 0.05) \times (2.7 - 0.05)$
(b)	34 nfw	2	B1 for 7.65 or 0.225 seen or M1 for $(7.6 + 0.05) \div (0.23 - 0.005)$

4	87 cao nfw	3	B2 for 87.04.... or 87.0 nfw or M1 for 500.5 or 5.75 seen or for $(500 + 0.5) \div (5.8 - 0.05)$ and B1 for truncating their decimal answer to an integer
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5	44	2	B for 75.5 or 119.5 seen
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6	7	2	B for 120.5 or 113.5 seen
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7	16.2 16.6 nfw	3	M for two of 2.35, 5.75, 2.45, 5.85 seen or $2 \times (5.8 - 0.05 + 2.4 - 0.05)$ or $2 \times (5.8 + 0.05 + 2.4 + 0.05)$ A1 16.2 or 16.6 in either answer space If zero scored SC2 for both correct reversed answers provided 16.6 nfw
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8	18 cao nfw	3	M2 for $\frac{877.5}{7.5 \times 6.5}$ or B1 for any two of 877.5, 7.5 and 6.5 seen
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9	95.5 96.5 in correct places cao	2	B1 for 95.5 or 96.5 in correct place or for answers reversed
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10	101.4, 102.6	2	M1 for 8.45 and 8.55 seen If 0 scored, SC1 for one correct value in correct position on answer line or for two correct reversed answers
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11	427.8 427.4	3	M2 for $2 \times (127.35 + 86.55)$ or $2 \times (127.35 + 86.45)$ or B1 for two of these figures: 127.35, 86.55, 127.25, 86.45 seen If zero scored, SC2 for upper bound 427.8 or lower bound 427.4 provided nfw
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12	435, 445 cao	2	B for one value in the correct place or SC1 for both values correct but reversed
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13	$p = 71.4025$ cao $q = 73.1025$ cao	3	B1 for 8.45 and 8.55 seen M1 for <i>their</i> $LB^2 [\pi]$ or <i>their</i> $UB^2 [\pi]$ If 0 scored, SC1 for one correct.
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14	48.15, 48.45 cao	2	B1 B1 If 0 then M1 for 16.0 and 16.15 soi
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15	6.1 final answer	2	M for [$\sqrt{37.8225}$ =] 6.15
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16	70	3	B1 24.5 or 0.35 seen M1 their LB \div their UB
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17	2.119×10^8 cao	3	M 81500 oe M1 their LB \times 2600
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18	249.5 [$\leq j <$] 250.5 cao	2	B1 for either, or both correct but reversed
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19	30.7975 cao	2	M 6.35 and 4.85 seen
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20	33 cao www	2	M any two of 5.5, 9.5, 12.5 seen
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