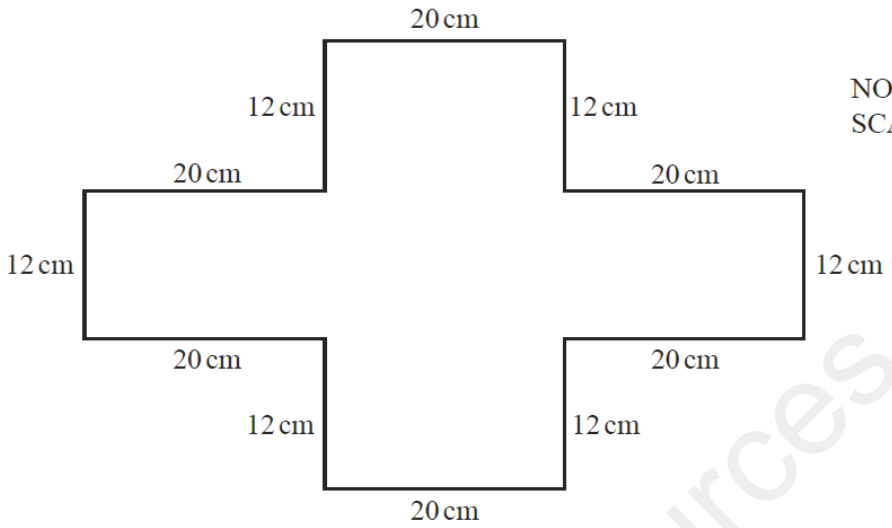
BOUNDS-SET-3-ms

1



Each of the lengths 20 cm and 12 cm is measured correct to the nearest centimetre.
Calculate the upper bound for the perimeter of the shape.

Answer ..... cm [3]

MS-1

198 cao	3	**M1** 12.5 and 20.5 seen **M1** 6 × sum of their two upper bounds

2	When a car wheel turns once, the car travels 120 cm, correct to the nearest centimetre. Calculate the lower and upper bounds for the distance travelled by the car when the wheel turns 20 times. *Answer* lower bound ..... cm upper bound ..... cm [2]
MS-2	2390 2410 — 2 — **M1** 119.5 and 120.5 or **B1** for one correct answer
3	The side of a square is 6.3 cm, correct to the nearest millimetre. The lower bound of the perimeter of the square is u cm and the upper bound of the perimeter is v cm. Calculate the value of **(a)** u, *Answer(a)* u = ... [1] **(b)** $v - u$. *Answer(b)* $v - u$ = ... [1]
MS-3	**(a)** 25 — 1 **(b)** 0.4 — 1 If zero scored **SC1** for 250 and 4 or 6.25 and 6.35

4	The cost of making a chair is \$28 correct to the nearest dollar. Calculate the lower and upper bounds for the cost of making 450 chairs. *Answer* lower bound \$ ..... upper bound \$ [2]
MS-4	12375 cao 12825 cao — **2** — **B1, B1** If no marks scored give **M1** for 27.5 and 28.5 seen
5	The population of a city is 128 000, correct to the nearest thousand. **(a)** Write 128 000 in standard form. *Answer(a)* ..... [1] **(b)** Write down the upper bound of the population. *Answer(b)* ..... [1]
MS-5	**(a)** 1.28×10^5 — **1** **(b)** 128 500 — **1**
6	A large water bottle holds 25 litres of water correct to the nearest litre. A drinking glass holds 0.3 litres correct to the nearest 0.1 litre. Calculate the lower bound for the number of glasses of water which can be filled from the bottle. *Answer* ..... [3]
MS-6	70 — **3** — **B1** 24.5 or 0.35 **seen** **M1** their LB ÷ their UB

7	The number of spectators at the 2010 World Cup match between Argentina and Mexico was 82 000 correct to the nearest thousand. If each spectator paid 2600 Rand (R) to attend the game, what is the lower bound for the total amount paid? Write your answer in standard form. *Answer R* ..... [3]

MS-7			
	2.119×10^8 cao	**3**	**M1** 81500 oe **M1** their LB × 2600

8	A circle has a radius of 8.5 cm correct to the nearest 0.1 cm. The lower bound for the area of the circle is $p\pi$ cm^2. The upper bound for the area of the circle is $q\pi$ cm^2. Find the value of p and the value of q. *Answer* p = ... q = ... [3]

MS-8			
	$p = 71.4025$ cao $q = 73.1025$ cao	**3**	**B1** for 8.45 and 8.55 seen **M1** for *their* LB^2 [π] or *their* UB^2 [π] If 0 scored, **SC1** for one correct.

9	A rectangle has length 5.8 cm and width 2.4 cm, both correct to 1 decimal place. Calculate the lower bound and the upper bound of the perimeter of this rectangle. *Answer* Lower bound ..... cm Upper bound ..... cm [3]
MS-9	16.2 16.6 nfww **3** **M1** for two of 2.35, 5.75, 2.45, 5.85 seen or $2 \times (5.8 - 0.05 + 2.4 \quad 0.05)$ 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 nfww
10	The volume of a cuboid is 878 cm^3, correct to the nearest cubic centimetre. The length of the base of the cuboid is 7 cm, correct to the nearest centimetre. The width of the base of the cuboid is 6 cm, correct to the nearest centimetre. Calculate the lower bound for the height of the cuboid. *Answer* ..... cm [3]

MS-10		18 cao nfww	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
11	The sides of a square are 8 cm, correct to the nearest centimetre. Calculate the upper bound for the area of the square. ..... cm^2 [2]			
MS-11		72.25 cao	2	**M1** for 8 + 0.5 or better seen