HIGHER

7.2 Bounds: Test Pack

EDEXCEL 1MA1 · Calculator allowed · about 60 minutes

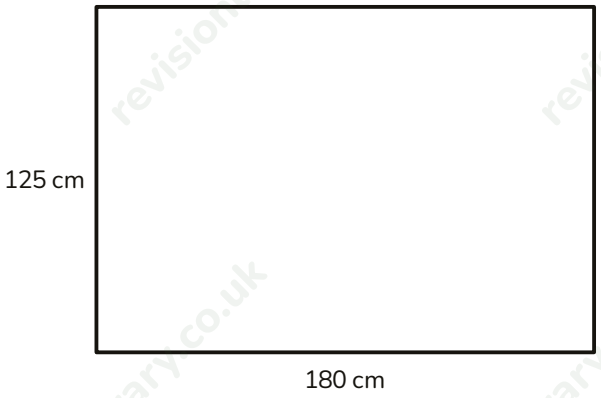
Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A rectangle has length 180 cm and width 125 cm, each correct to the nearest 5 cm. Work out the upper bound for the area of the rectangle.

Diagram NOT accurately drawn



(Total for Question 1 is 4 marks)

2 A runner covers 440 m, correct to the nearest 10 m, in 17.9 seconds, correct to 1 decimal place. Work out the lower bound for her average speed. Give your answer correct to 3 significant figures.

(Total for Question 2 is 4 marks)

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3 The mass of a sample is 9800 g, correct to 2 significant figures. Write down the error interval for the mass, m grams.

(Total for Question 3 is 2 marks)

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4 A runner covers 610 m, correct to the nearest 10 m, in 35.3 seconds, correct to 1 decimal place. Work out the upper bound for her average speed. Give your answer correct to 3 significant figures.

(Total for Question 4 is 4 marks)

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5 The length of a ribbon is 8 cm, correct to the nearest whole number. Write down the error interval for the length, L cm.

(Total for Question 5 is 2 marks)

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6 A rectangle has length 3.6 cm and width 1.6 cm, each correct to the nearest 0.1 cm. Work out the lower bound for the area of the rectangle.

Diagram NOT accurately drawn



(Total for Question 6 is 4 marks)

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7 a = 2.69 and b = 0.84, each correct to 2 decimal places. Work out the lower bound of a x b.

(Total for Question 7 is 3 marks)

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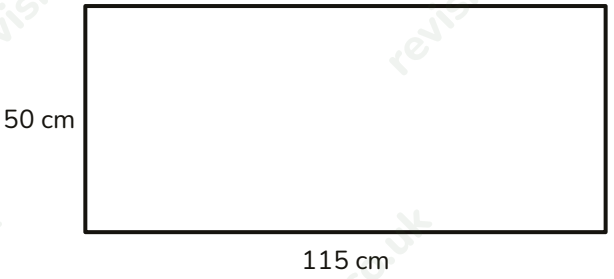
8 a = 57 and b = 81, each correct to whole number. Work out the upper bound of a - b.

(Total for Question 8 is 3 marks)

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9 A rectangle has length 115 cm and width 50 cm, each correct to the nearest 5 cm. Work out the upper bound for the area of the rectangle.

Diagram NOT accurately drawn



(Total for Question 9 is 4 marks)

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10 a = 28.2 and b = 16.8, each correct to 1 decimal place. Work out the upper bound of a - b.

(Total for Question 10 is 3 marks)

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11 The length of a ribbon is 225 cm, correct to the nearest 5. Write down the error interval for the length, L cm.

(Total for Question 11 is 2 marks)

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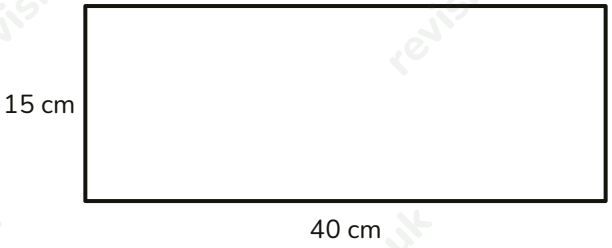
12 The mass of a sample is 354000 g, correct to 3 significant figures. Write down the error interval for the mass, m grams.

(Total for Question 12 is 2 marks)

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13 A rectangle has length 40 cm and width 15 cm, each correct to the nearest whole number. Work out the lower bound for the area of the rectangle.

Diagram NOT accurately drawn

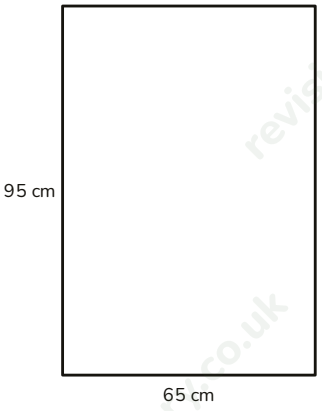


(Total for Question 13 is 4 marks)

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14 A rectangle has length 65 cm and width 95 cm, each correct to the nearest 5 cm. Work out the lower bound for the area of the rectangle.

Diagram NOT accurately drawn



(Total for Question 14 is 4 marks)

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Mark scheme · 7.2 Bounds: Test Pack

Question 1

upper bound of length 182.5	**B1**
upper bound of width 127.5	**B1**
multiplies two bounds	**M1**
23268.75 cm² cao	**A1**

Answer: 23268.75 cm^2

Question 2

distance bound 435	**B1**
time bound 17.95	**B1**
distance / time using the correct bounds	**M1**
24.2 m/s cao	**A1**

Answer: 24.2 m/s

Question 3

lower bound 9750	**B1**
upper bound 9850 with correct inequalities	**B1**

Answer: 9750 ≤ m < 9850

Question 4

distance bound 615	**B1**
time bound 35.25	**B1**
distance / time using the correct bounds	**M1**
17.4 m/s cao	**A1**

Answer: 17.4 m/s

Question 5

lower bound 7.5	**B1**
upper bound 8.5 with correct inequalities	**B1**

Answer: 7.5 ≤ L < 8.5

Question 6

lower bound of length 3.55	**B1**
lower bound of width 1.55	**B1**
multiplies two bounds	**M1**
5.5025 cm² cao	**A1**

Answer: 5.5025 cm^2

Question 7

correct bound for a	**B1**
correct bound for b	**B1**
2.241975 cao	**B1**

Answer: 2.241975

Question 8

correct bound for a	**B1**
correct bound for b	**B1**
-23 cao	**B1**

Answer: -23

Question 9

upper bound of length 117.5	**B1**
upper bound of width 52.5	**B1**
multiplies two bounds	**M1**
6168.75 cm² cao	**A1**

Answer: 6168.75 cm^2

Question 10

correct bound for a	**B1**
correct bound for b	**B1**
11.5 cao	**B1**

Answer: 11.5

Question 11

lower bound 222.5	**B1**
upper bound 227.5 with correct inequalities	**B1**

Answer: 222.5 ≤ L < 227.5

Question 12

lower bound 353500	**B1**
upper bound 354500 with correct inequalities	**B1**

Answer: 353500 ≤ m < 354500

Question 13

lower bound of length 39.5	**B1**
lower bound of width 14.5	**B1**
multiplies two bounds	**M1**
572.75 cm² cao	**A1**

Answer: 572.75 cm^2

Question 14

lower bound of length 62.5	**B1**
lower bound of width 92.5	**B1**
multiplies two bounds	**M1**
5781.25 cm² cao	**A1**

Answer: 5781.25 cm^2

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