HIGHER

7.2 Bounds: 30-minute Pack

EDEXCEL 1MA1 · Calculator allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 a = 1.89 and b = 1.76, each correct to 2 decimal places. Work out the upper bound of a x b.

(Total for Question 1 is 3 marks)

2 A runner covers 350 m, correct to the nearest 10 m, in 10.3 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)

3 The mass of a sample is 3.83 g, correct to 3 significant figures. Write down the error interval for the mass, m grams.

(Total for Question 3 is 2 marks)

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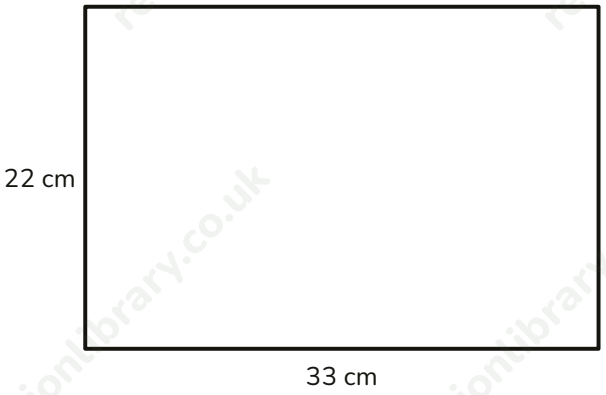
4 A runner covers 190 m, correct to the nearest 10 m, in 36.6 seconds, correct to 1 decimal place. Work out the upper bound for her average speed. Give your answer correct to 3 significant figures.

(Total for Question 4 is 4 marks)

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5 A rectangle has length 33 cm and width 22 cm, each correct to the nearest whole number. Work out the upper bound for the area of the rectangle.

Diagram NOT accurately drawn



(Total for Question 5 is 4 marks)

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6 The length of a track is 88 cm, correct to the nearest whole number. Write down the error interval for the length, x cm.

(Total for Question 6 is 2 marks)

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7 The mass of a sample is 46 g, correct to 2 significant figures. Write down the error interval for the mass, m grams.

(Total for Question 7 is 2 marks)

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8 The length of a plank is 380 cm, correct to the nearest 10. Write down the error interval for the length, L cm.

(Total for Question 8 is 2 marks)

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Mark scheme · 7.2 Bounds: 30-minute Pack

Question 1

correct bound for a	**B1**
correct bound for b	**B1**
3.344675 cao	**B1**

Answer: 3.344675

Question 2

distance bound 345	**B1**
time bound 10.35	**B1**
distance / time using the correct bounds	**M1**
33.3 m/s cao	**A1**

Answer: 33.3 m/s

Question 3

lower bound 3.825	**B1**
upper bound 3.835 with correct inequalities	**B1**

Answer: 3.825 ≤ m < 3.835

Question 4

distance bound 195	**B1**
time bound 36.55	**B1**
distance / time using the correct bounds	**M1**
5.34 m/s cao	**A1**

Answer: 5.34 m/s

Question 5

upper bound of length 33.5	**B1**
upper bound of width 22.5	**B1**
multiplies two bounds	**M1**
753.75 cm² cao	**A1**

Answer: 753.75 cm^2

Question 6

lower bound 87.5	**B1**
upper bound 88.5 with correct inequalities	**B1**

Answer: 87.5 ≤ x < 88.5

Question 7

lower bound 45.5	**B1**
upper bound 46.5 with correct inequalities	**B1**

Answer: 45.5 ≤ m < 46.5

Question 8

lower bound 375	**B1**
upper bound 385 with correct inequalities	**B1**

Answer: 375 ≤ L < 385

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