



ACHIEVE ACADEMY

GCSE Maths — Higher Tier

Bounds & Error Intervals · Practice Booklet

NAME: _____

CLASS: _____

DATE: _____

☐ Developing

☐ Secure

☒ Greater Depth

Answer every question in the working space provided. Method marks are available for correct working even if the final answer is wrong. Check the time allowed with your tutor before you start.

Bounds & Error Intervals

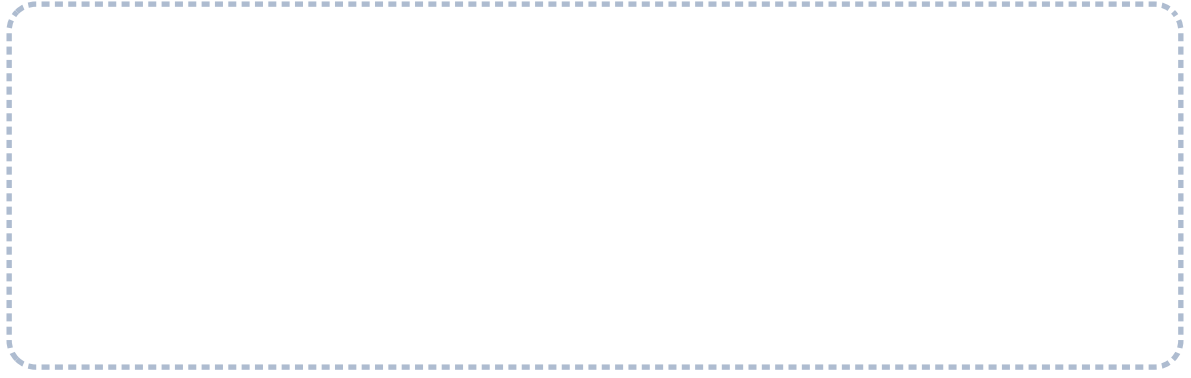
Total marks available: 85

● Bounds & Error Intervals

Q1

[2 marks]

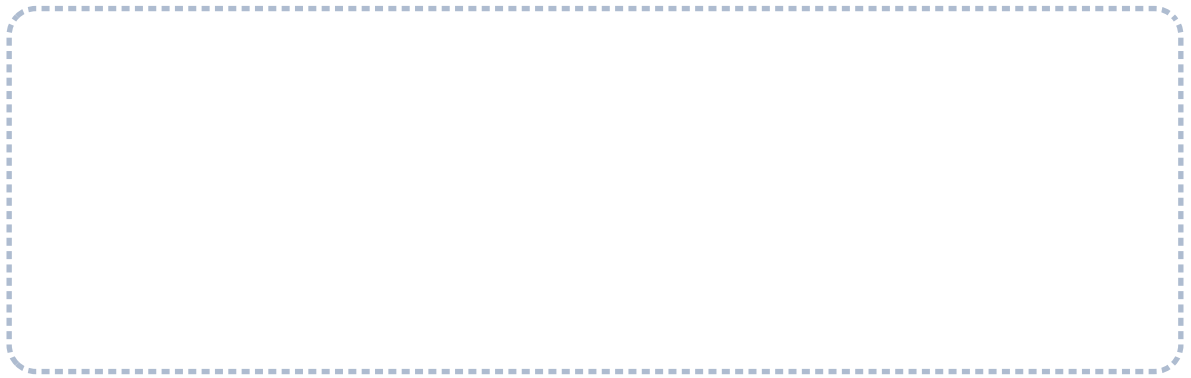
A length is 2.75 cm, correct to 2 decimal places. Find the upper bound.



Q2

[2 marks]

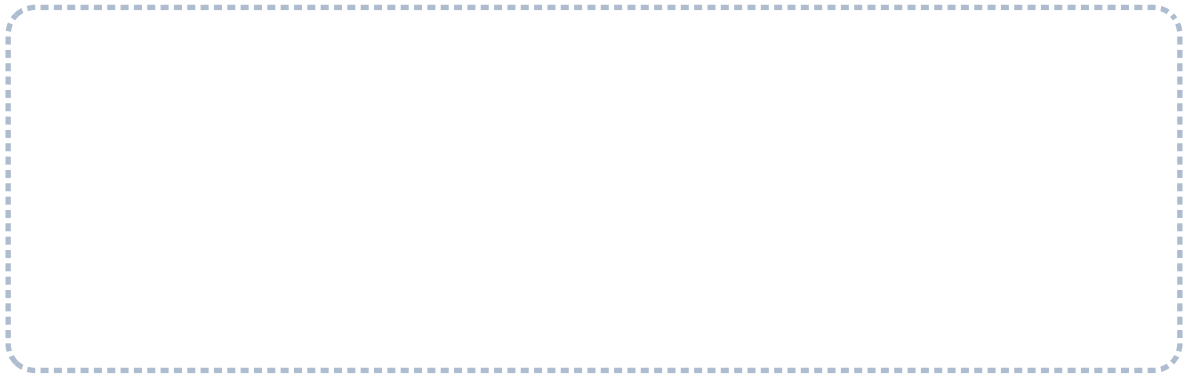
A mass, x kg, is 4000 kg when rounded to the nearest 100. Write down the error interval for x .



Q3

[2 marks]

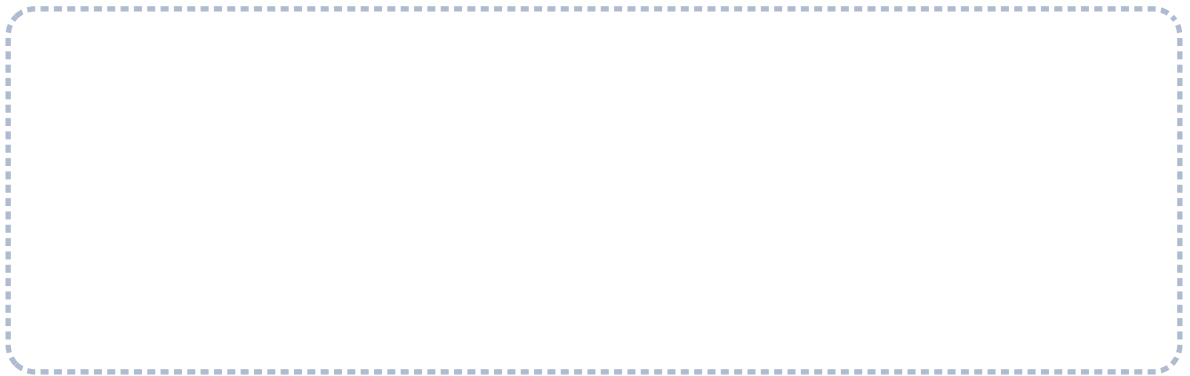
A volume, x litres, is 3300 litres when rounded to the nearest 100. Write down the error interval for x .



Q4

[2 marks]

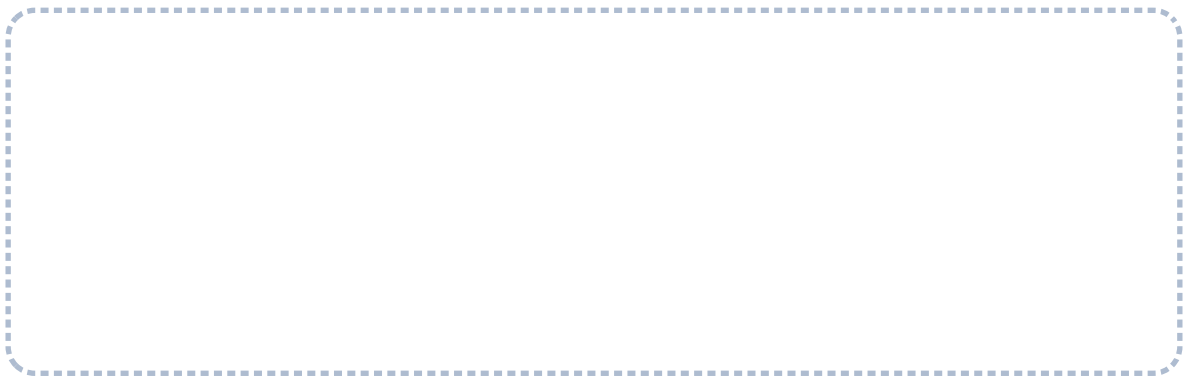
A mass is 5 kg, correct to 1 decimal place. Find the upper bound.



Q5

[2 marks]

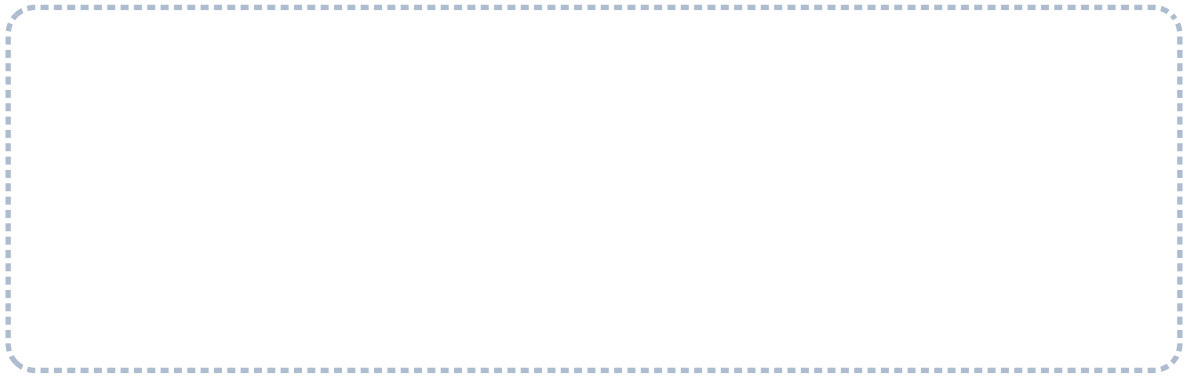
A volume, x litres, is 170 litres when rounded to the nearest 10. Write down the error interval for x .



Q6

[2 marks]

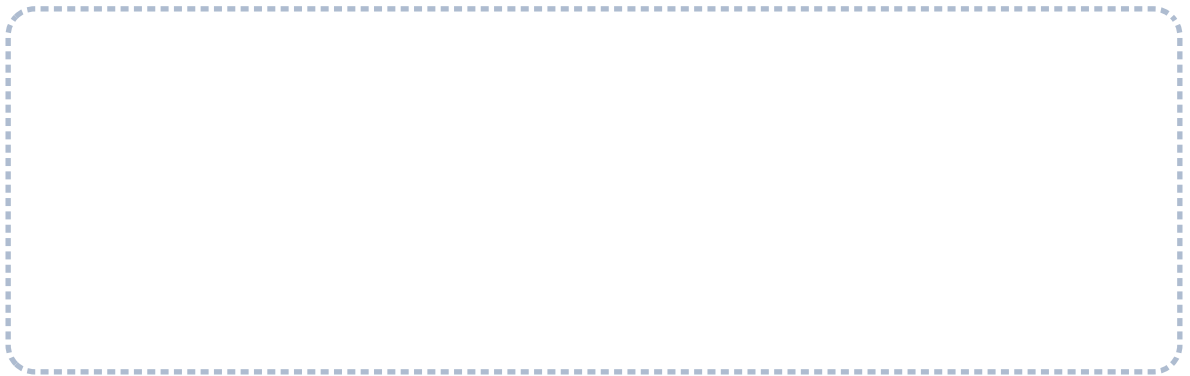
A length, x cm, is 170 cm when rounded to the nearest 10. Write down the error interval for x .



Q7

[2 marks]

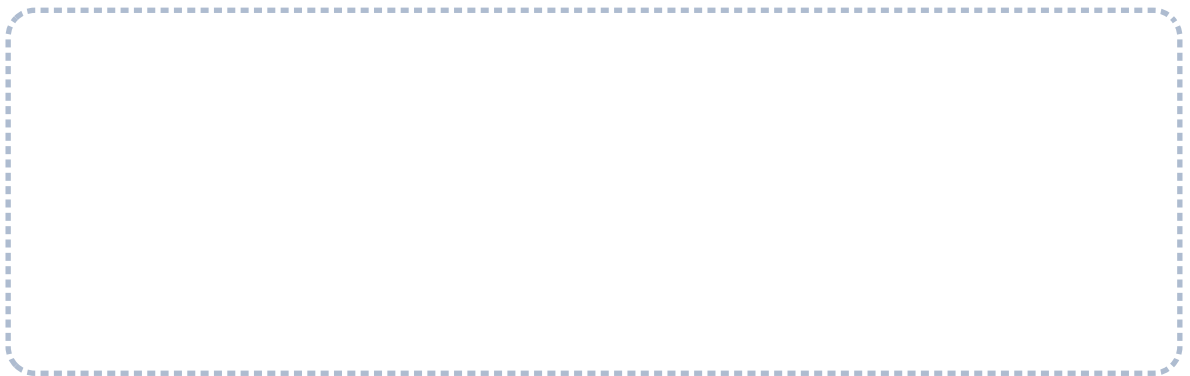
A length is 2.2 cm, correct to 1 decimal place. Find the lower bound.



Q8

[2 marks]

A mass is 5.89 kg, correct to 2 decimal places. Find the lower bound.



Q9

[2 marks]

A length is 5.47 cm, correct to 2 decimal places. Find the upper bound.

Q10

[2 marks]

A length, x cm, is 3000 cm when rounded to the nearest 100. Write down the error interval for x .

Q11

[3 marks]

A block has mass 124 g and volume 23 cm^3 , both correct to the nearest whole number. Find the minimum possible density of the block, in g/cm^3 . Give your answer to 2 decimal places.

Q12

[3 marks]

A block has mass 189 g and volume 37 cm^3 , both correct to the nearest whole number. Find the minimum possible density of the block, in g/cm^3 . Give your answer to 2 decimal places.

Q13

[3 marks]

A block has mass 91 g and volume 14 cm³, both correct to the nearest whole number. Find the minimum possible density of the block, in g/cm³. Give your answer to 2 decimal places.

Q14

[3 marks]

A block has mass 149 g and volume 33 cm³, both correct to the nearest whole number. Find the minimum possible density of the block, in g/cm³. Give your answer to 2 decimal places.

Q15

[3 marks]

A car travels 356 km in 6 hours, both correct to the nearest whole number. Find the maximum possible average speed of the car, in km/h. Give your answer to 2 decimal places.

Q16

[3 marks]

A car travels 243 km in 16 hours, both correct to the nearest whole number. Find the maximum possible average speed of the car, in km/h. Give your answer to 2 decimal places.

Q17

[3 marks]

A car travels 168 km in 11 hours, both correct to the nearest whole number. Find the maximum possible average speed of the car, in km/h. Give your answer to 2 decimal places.

Q18

[3 marks]

A car travels 384 km in 6 hours, both correct to the nearest whole number. Find the maximum possible average speed of the car, in km/h. Give your answer to 2 decimal places.

Q19

[3 marks]

A car travels 138 km in 17 hours, both correct to the nearest whole number. Find the maximum possible average speed of the car, in km/h. Give your answer to 2 decimal places.

Q20

[3 marks]

A car travels 98 km in 4 hours, both correct to the nearest whole number. Find the maximum possible average speed of the car, in km/h. Give your answer to 2 decimal places.

Q21

[3 marks]

A plank of wood has length 219 cm, correct to the nearest whole number. A piece of length 114 cm, correct to the nearest whole number, is cut from it. Find the maximum possible length of wood remaining, in cm.

Q22

[3 marks]

A plank of wood has length 160 cm, correct to the nearest whole number. A piece of length 114 cm, correct to the nearest 10, is cut from it. Find the maximum possible length of wood remaining, in cm.

Q23

[3 marks]

A plank of wood has length 356 cm, correct to the nearest whole number. A piece of length 96 cm, correct to the nearest whole number, is cut from it. Find the maximum possible length of wood remaining, in cm.

Q24

[3 marks]

A plank of wood has length 383 cm, correct to the nearest whole number. A piece of length 59 cm, correct to the nearest 10, is cut from it. Find the maximum possible length of wood remaining, in cm.

Q25

[4 marks]

$v = (p - q) \div r$, where $p = 344$, $q = 58$ and $r = 10$, all correct to the nearest whole number. Find the minimum possible value of v . Give your answer to 2 decimal places.

Q26

[4 marks]

$v = (p - q) \div r$, where $p = 441$, $q = 34$ and $r = 19$, all correct to the nearest whole number. Find the minimum possible value of v . Give your answer to 2 decimal places.

Q27

[4 marks]

$v = (p - q) \div r$, where $p = 385$, $q = 70$ and $r = 10$, all correct to the nearest whole number. Find the minimum possible value of v . Give your answer to 2 decimal places.

Q28

[4 marks]

$v = (p - q) \div r$, where $p = 347$, $q = 43$ and $r = 10$, all correct to the nearest whole number. Find the minimum possible value of v . Give your answer to 2 decimal places.

Q29

[3 marks]

A plank of wood has length 280 cm, correct to the nearest whole number. A piece of length 96 cm, correct to the nearest 10, is cut from it. Find the maximum possible length of wood remaining, in cm.

Q30

[4 marks]

$v = (p - q) \div r$, where $p = 436$, $q = 94$ and $r = 16$, all correct to the nearest whole number. Find the minimum possible value of v . Give your answer to 2 decimal places.