

GCSE Numeracy



Calculator Allowed

Intermediate Tier

Progress Check #2

90 Minutes

Student Name: _____

Question	Topic	Grade	Maximum Mark	Mark Awarded
1	% in context	E	3	
2	% Discount	E	7	
3	Conversion Graph	D	4	
4	Unit Costs	D	6	
5	Exchange Rates	D	10	
6	Mean of Grouped Data	D	3	
7	Income Tax	C	6	
8a	Grouped Frequency Diagram	D	3	
8b	Estimating Mean	C	4	
8c	Median group	C	1	
9	Angles Parallel Lines	C	2	
10	Percentage Change	C	4	
11	Percentage Change	C	3	
12	Cumulative Frequency	B	5	
13	Box & Whisker Diagrams	B	6	
14	Reverse Percentages	B	6	
15	Upper & Lower Bounds in Measurement	B	7	

3. Graham and Lisa go on holiday to Copenhagen, Denmark.

- (a) They need to change currency between pounds (£) and the Danish kroner (DKK). They both go into the same currency shop. Graham changes £200 and receives 1800DKK. Lisa changes £300 and receives 2700DKK.

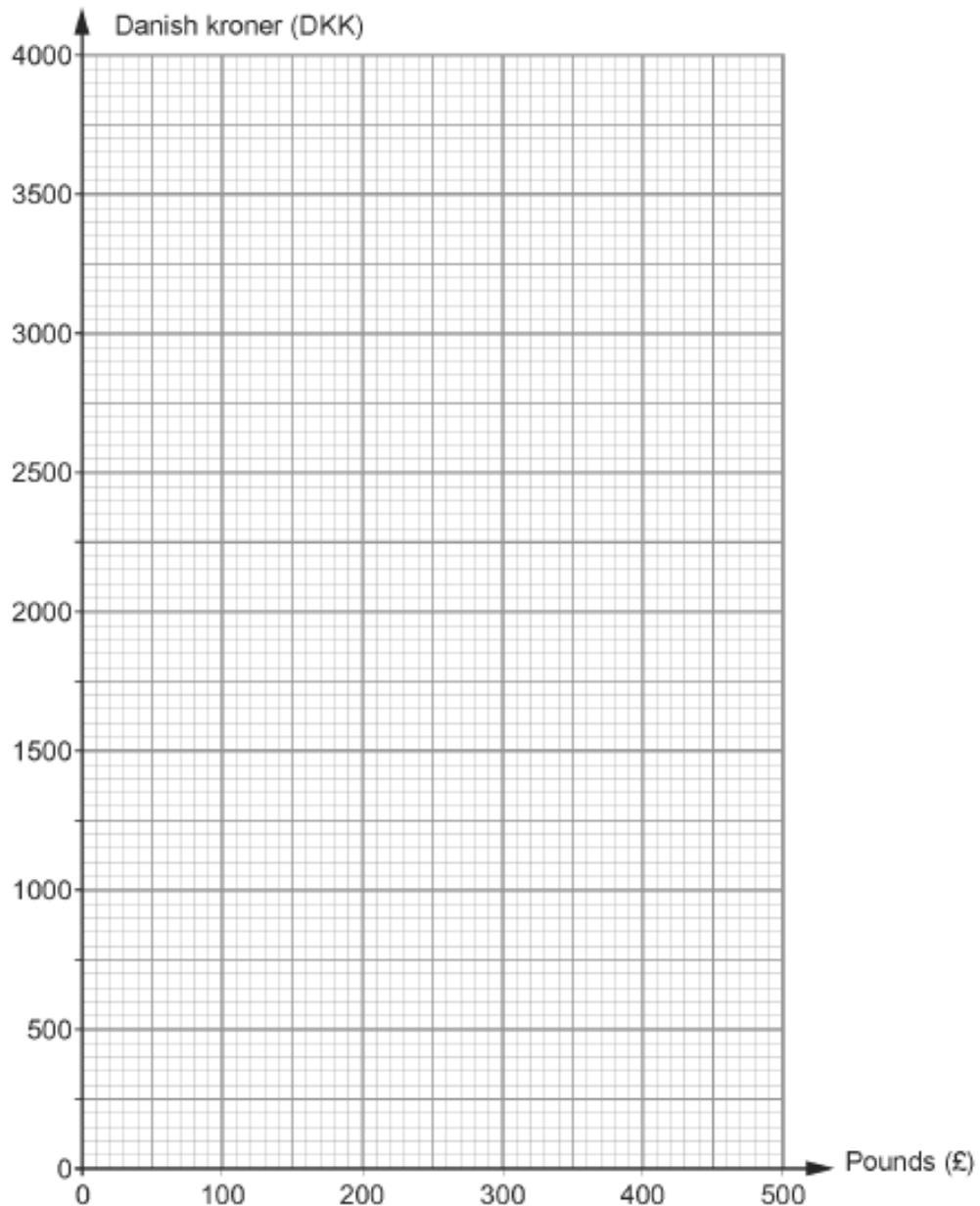
- (i) Draw a conversion graph that can be used to change pounds (£) to Danish kroner (DKK). [2]

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5. The dirham is the unit of currency in the United Arab Emirates.

Exchange bureau

Going on holiday?	£1 buys 5.48 dirham
Selling back your dirham?	£1 for 5.52 dirham

- (i) Lois goes on holiday to Dubai, in the United Arab Emirates. She takes £350 in cash to buy United Arab Emirates dirham.

On the day she exchanges her money, the bureau has only 5, 10, 20, 50 and 100 dirham notes.

Lois does not intend to spend more than £350, but she wants to buy as many dirham notes as she can with her cash.

How much will Lois have left from her £350 after buying the dirham?
Give your answer to the nearest penny.

[6]

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- (ii) Kenny exchanged £1000 for dirham. He then cancelled his holiday and exchanged all his dirham back to pounds. How much money did Kenny lose?

[4]

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6.

Pedro has kept a record of the total number of goals he scored in each of the twenty seasons that he played professional football.

The table below shows this information.

Goals scored	Number of seasons
4	3
6	8
7	2
11	6
22	1

(a) Calculate the mean number of goals scored by Pedro per season.

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[3]

7.

Loretta is paid in euros.

She is checking her tax bill for last year.

The tax rates last year were as follows:

- No tax on the first €3500 of earnings
- Earnings in excess of €3500 and up to €10 500: taxed at a rate of 25%
- Earnings above €10 500: taxed at a rate of 35%

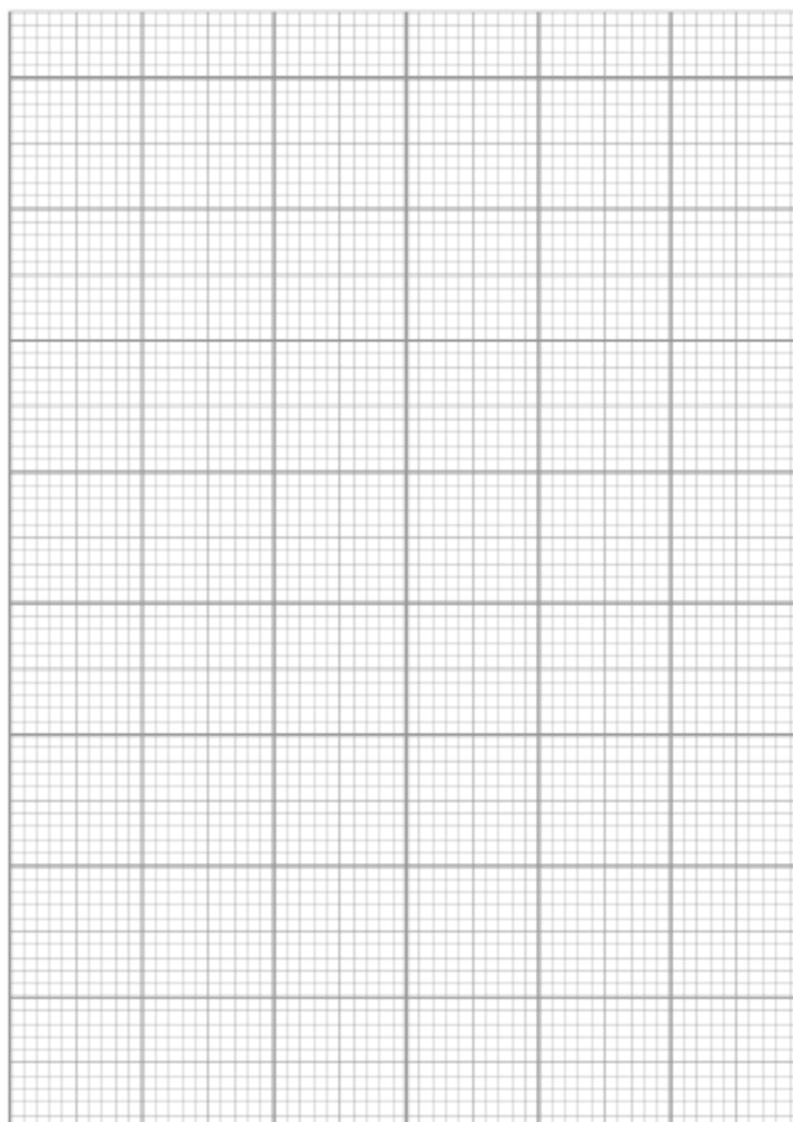
Last year Loretta's gross earnings were €40000. How much tax did she pay in total? [6]

8. A survey of 240 primary school pupils was carried out to find the amount of time they spent each week doing their homework.
Here are the results of the survey.

Time taken, t , in hours	Number of pupils
$0 < t \leq 1$	80
$1 < t \leq 2$	60
$2 < t \leq 3$	52
$3 < t \leq 4$	32
$4 < t \leq 5$	16

- (a) Draw a grouped frequency diagram of the data.

[3]



(b) Calculate an estimate of the mean time that pupils spent each week doing their homework. [4]

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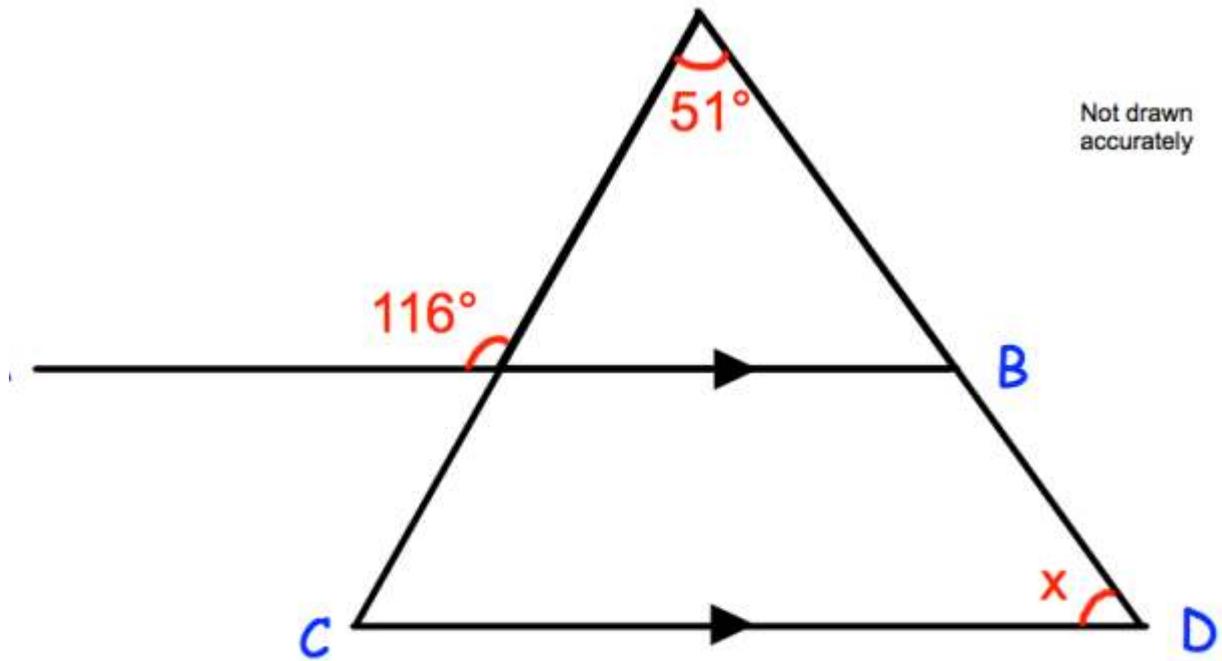
(c) Write down the class interval that contains the median. [1]

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9. In the diagram, AB is parallel to CD.



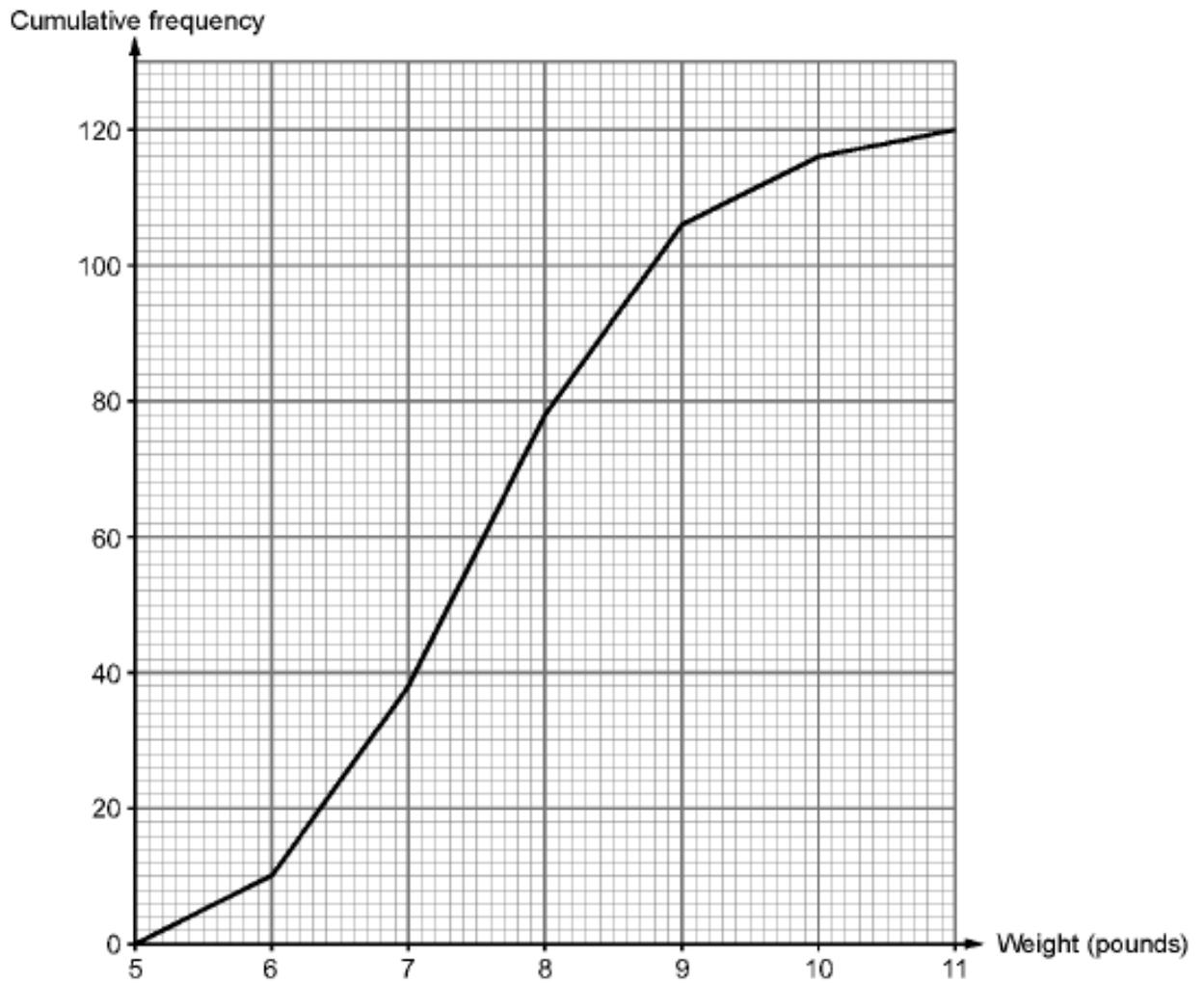
Work out the size of angle x .

You **must** show your workings.

[2]

12.

The birth weights of 120 babies were recorded.
The cumulative frequency diagram shows the distribution of the weights.



(a) Write down an estimate of the median weight of the 120 babies. [1]

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(b) Calculate an estimate of the interquartile range of the weights of the 120 babies. [2]

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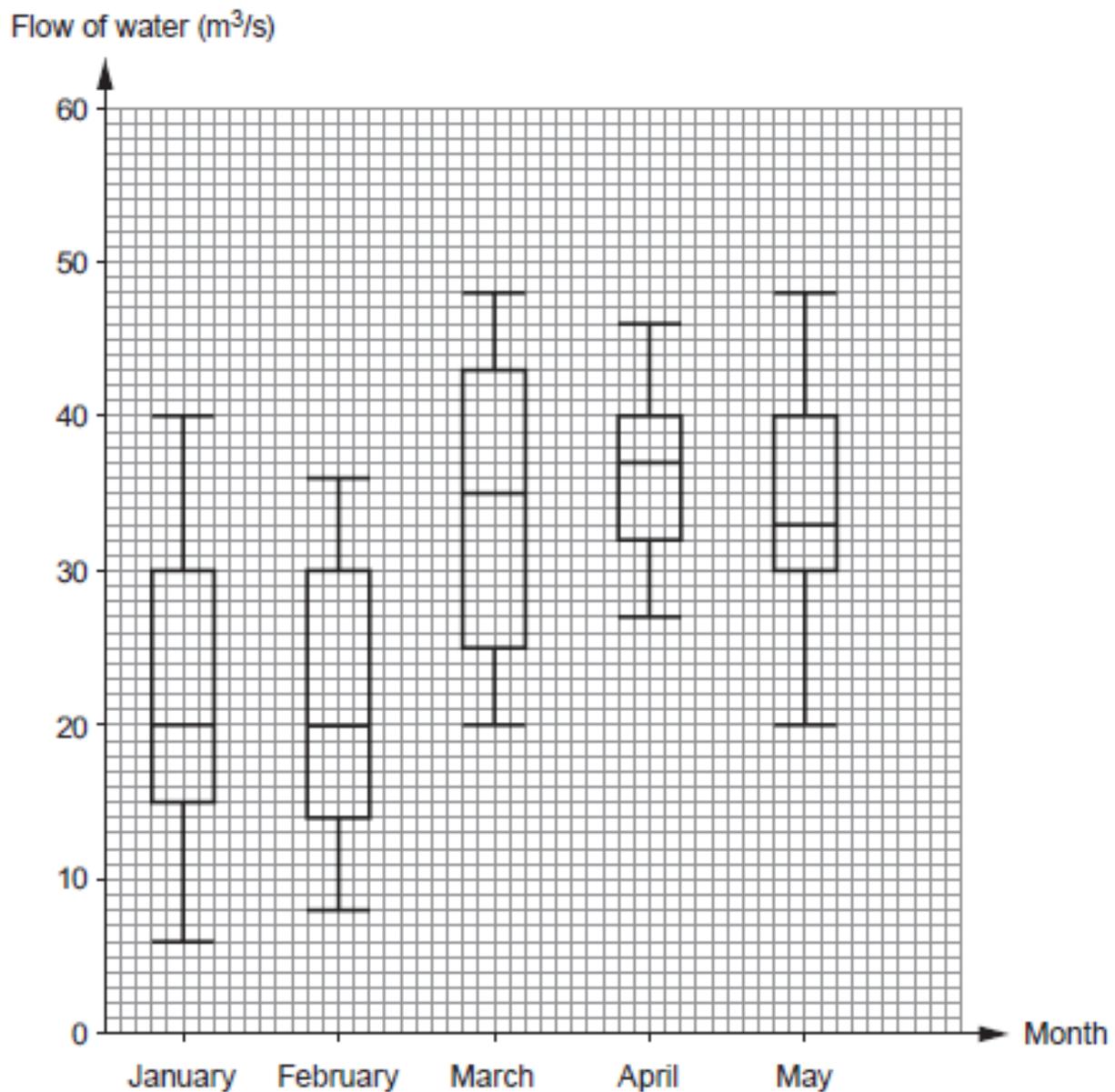
(c) Write down an estimate of the number of babies whose weights were greater than 9 pounds. [2]

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13.

The following box and whisker plots show the flow of water through a drain, measured in m^3/s . The flow of water was measured at 11 a.m. each day for the first 5 months of the year.



(a) In which of the five months was the median flow of water the greatest?

[1]

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(b) In which of the five months was the range of the flow of water the greatest? [1]

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(c) Iona is writing some statements for a report on the flow of water through the drain. Complete each of the statements given below.

(i) 'Both the upper quartiles and medians in the months of
and were the same.' [1]

(ii) '25% of the results in March show the flow of water was greater than
..... m^3/s .' [1]

(d) Circle either TRUE or FALSE for each of the following statements. [2]

25% of the results in January show the flow of water was less than $6 \text{ m}^3/\text{s}$.	TRUE	FALSE
The units, m^3/s , measure the volume of water passing through the drain each second.	TRUE	FALSE
The mean flow of water in April was certainly greater than $36 \text{ m}^3/\text{s}$.	TRUE	FALSE
The month with the greatest difference between the lower quartile and the median was May.	TRUE	FALSE

14. A shop has reduced the price of a bicycle by 40% of its original price.
The sale price of the bicycle is £192.
Calculate the original price of the bicycle.

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[3]

15. The bill for repairing a washing machine came to £151.68, inclusive of VAT at 20%.
What was the cost before VAT was added?

[3]

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16.

<p>Stylish computer desk Made of laminate wood. Non-scratch top. Length is exactly 2000mm</p>	
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Luc wants this new desk for his bedroom.

The desk is to fit on the straight wall between his wardrobe and his bookcase.

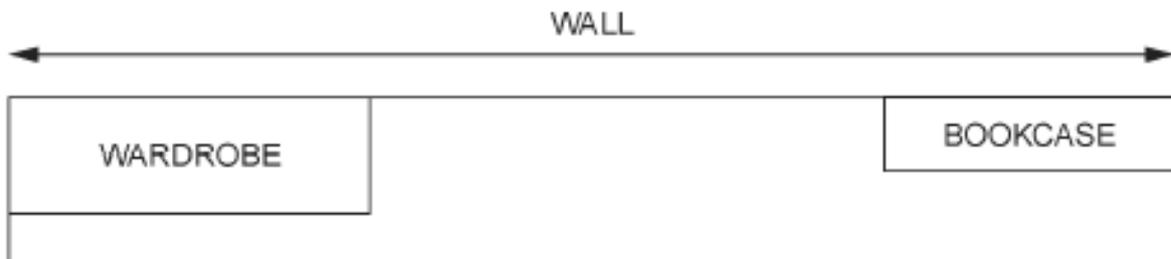


Diagram not drawn to scale

Luc has measured the length of

- the wall, which is 600 cm, correct to the nearest 10 cm,
- the bookcase, which is 147 cm, correct to the nearest 1 cm,
- the wardrobe, which is 250 cm, correct to the nearest 1 cm.

(a) What is the greatest possible length of the wall?
Circle your answer.

[1]

600 cm 605 cm 645 cm 610 cm 650 cm

(b) What is the least possible length of the wardrobe?
Circle your answer.

[1]

249 cm 249.45 cm 249.49 cm 249.5 cm 250 cm

