

UNIT 16 *Cumulative Frequency*

Overhead Slides

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- 16.2 Calculating the Mean from a Table
- 16.3 Grouped Data (2 slides)
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OS 16.1*Averages*

For the sample below

1 4 7 8 14 32 33 35 46

Mean = _____

Range = _____

Median =

OS 16.2

Calculating the Mean from a Table

Calculate the mean number of people per minute entering a shop.

<i>Number of People (per minute)</i>	<i>Frequency</i>	<i>Number of People × Frequency</i>
0	7	
1	8	
2	19	
3	23	
4	5	
5	33	
6	5	
TOTALS		

$$\text{Mean} = \frac{\quad}{\quad}$$

$$=$$

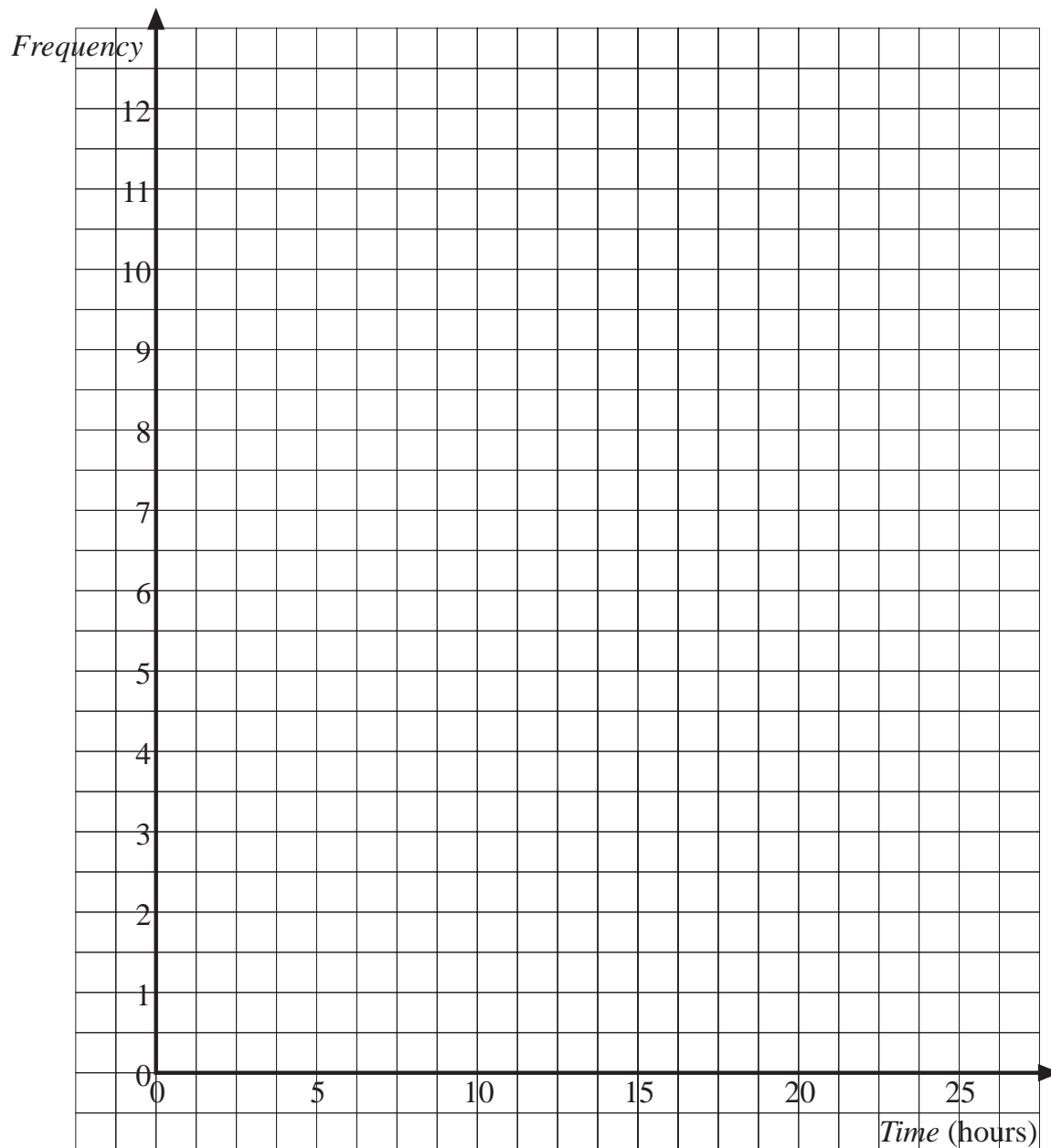
OS 16.3.1

Grouped Data

The time taken to complete a project was recorded to the nearest hour by the pupils in a class.

<i>Time</i> (hours)	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25
<i>Frequency</i>	3	12	10	4	2

Draw a bar chart on the axes below to illustrate the data.



OS 16.3.2

Grouped Data

Estimate the mean time taken for the project:

<i>Time (mins)</i>	<i>Mid-Value of Time</i>	<i>Frequency</i>	<i>Mid-Value × Frequency</i>
1 - 5		3	
6 - 10		12	
11 - 15		10	
16 - 20		4	
21 - 25		2	
TOTALS			

Estimate of mean = _____

=

OS 16.4

Interquartile Range

A sample contains 15 values.

Median = th value

Lower quartile = th value

Upper quartile = th value

3 37 11 12 17 19 100 33
 16 15 33 42 11 16 30

Write the numbers in order.

Median =

Lower quartile =

Upper quartile =

Interquartile range =

=

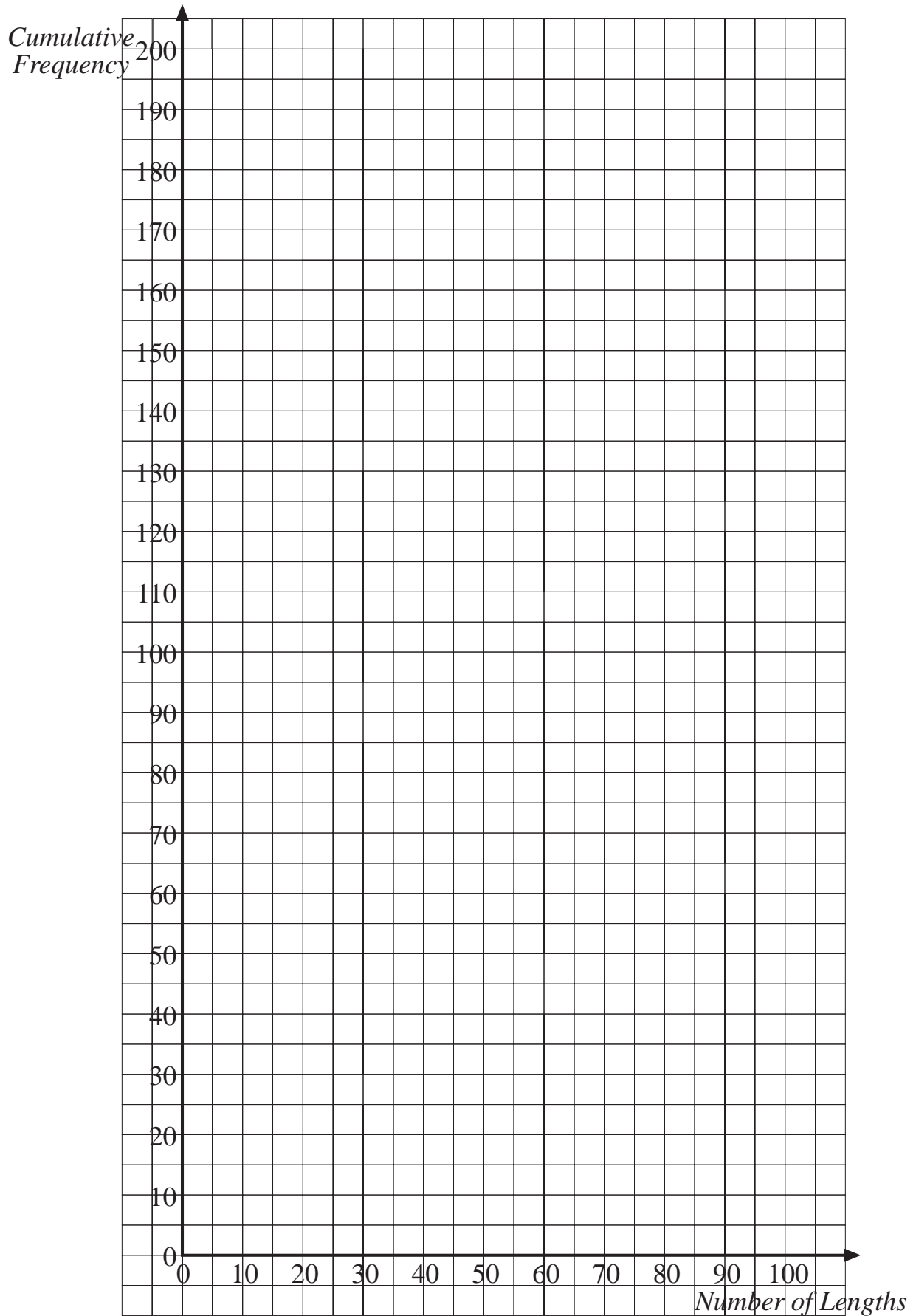
OS 16.5.1*Drawing Cumulative Frequency Graph*

The number of lengths swum by children in a sponsored swim are listed in the table.

<i>Number of Lengths</i>	<i>Frequency</i>	<i>Cumulative Frequency</i>
1 - 10	3	
11 - 20	17	
21 - 30	24	
31 - 40	18	
41 - 50	29	
51 - 60	30	
61 - 70	33	
71 - 80	17	
81 - 90	20	
91 - 100	9	

Complete the table and then draw a cumulative frequency graph to illustrate the data.

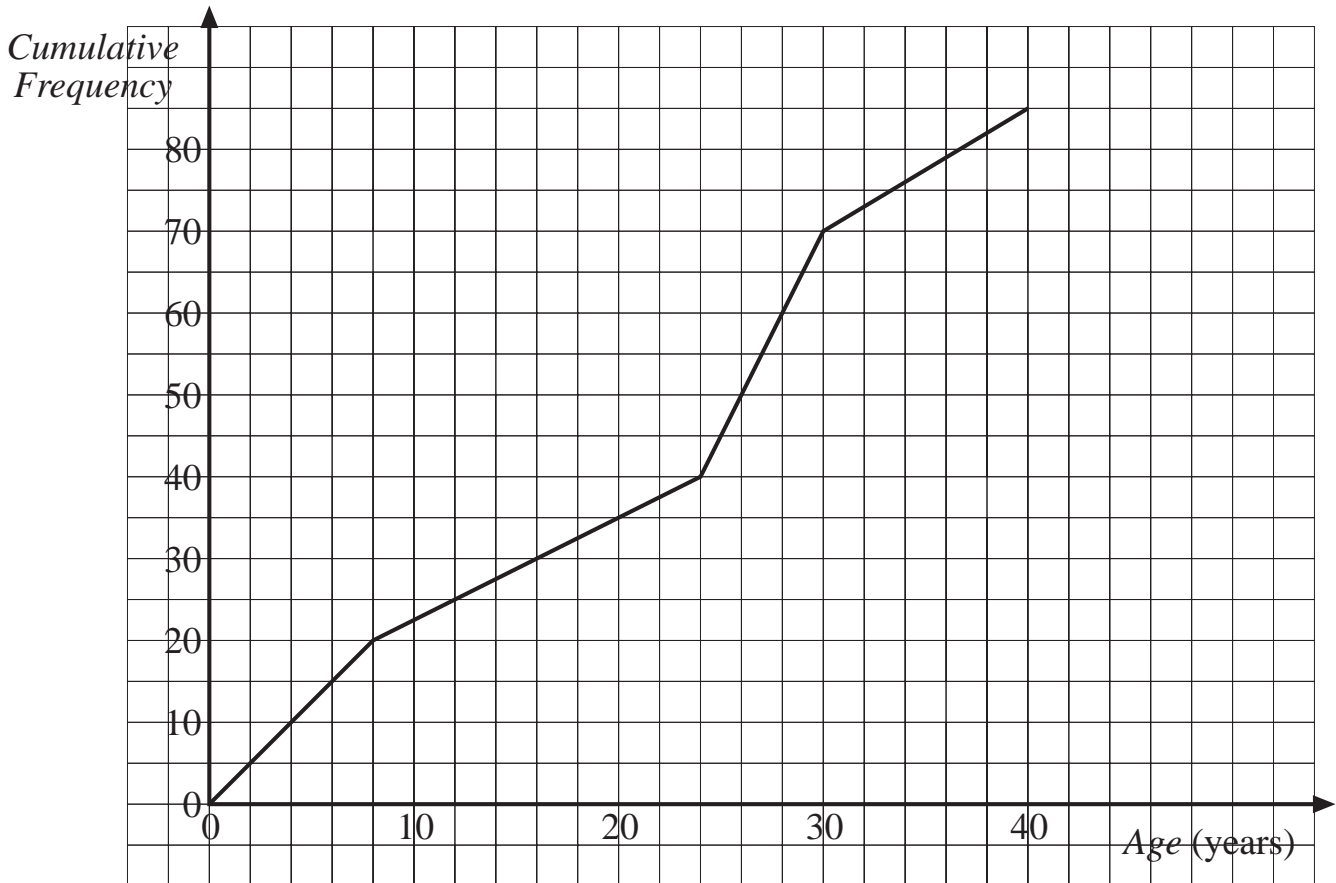
OS 16.5.2



OS 16.6

Using Cumulative Frequency Graph

Determine the *median* and *interquartile range* of the data illustrated in the cumulative frequency graph.



Median =

Lower quartile =

Upper quartile =

Interquartile range =

OS 16.7

Box and Whisker Plots

1. Draw a box and whisker plot for a sample with:

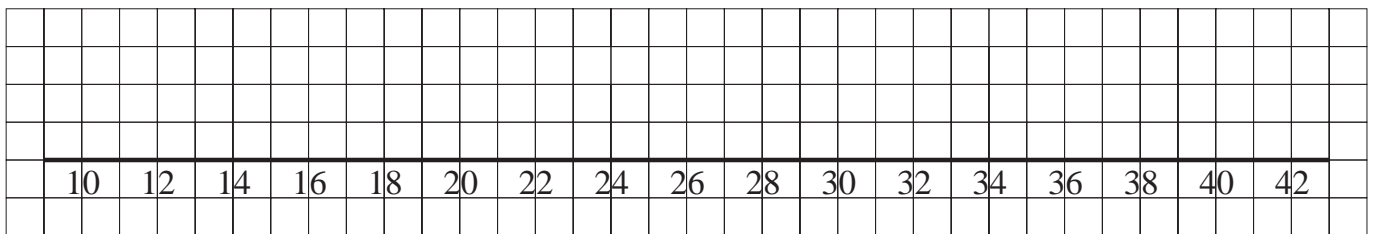
Maximum = 40

Minimum = 12

Median = 24

Lower quartile = 17

Upper quartile = 26



2. Draw a box and whisker plot for the sample:

15 17 33 39 51 60 72 80 85

