

## Stats 1

- 1) Three positive integers  $a, b$ , and  $c$ , where  $a < b < c$ , are such that their median is 11, their mean is 9 and their range is 10. Find the value of  $a$ .
- 2) The number of hours of sleep of 21 students are shown in the frequency table below

Hours of sleep	Number of students
4	2
5	5
6	4
7	3
8	4
10	2
12	1

Find

- (a) the median;
- (b) the lower quartile;
- (c) the interquartile range.

- 3) The following table shows the mathematics marks scored by students.

Mark	1	2	3	4	5	6	7
Frequency	0	4	6	$k$	8	6	6

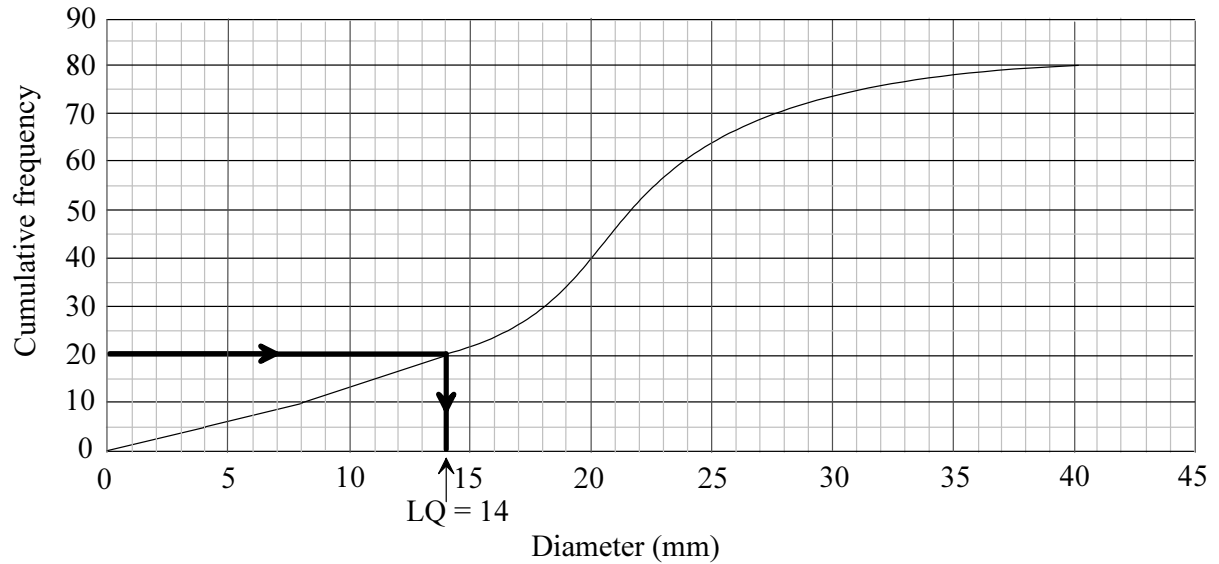
The mean mark is 4.6.

- (a) Find the value of  $k$ .
- (b) Write down the mode.

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4)

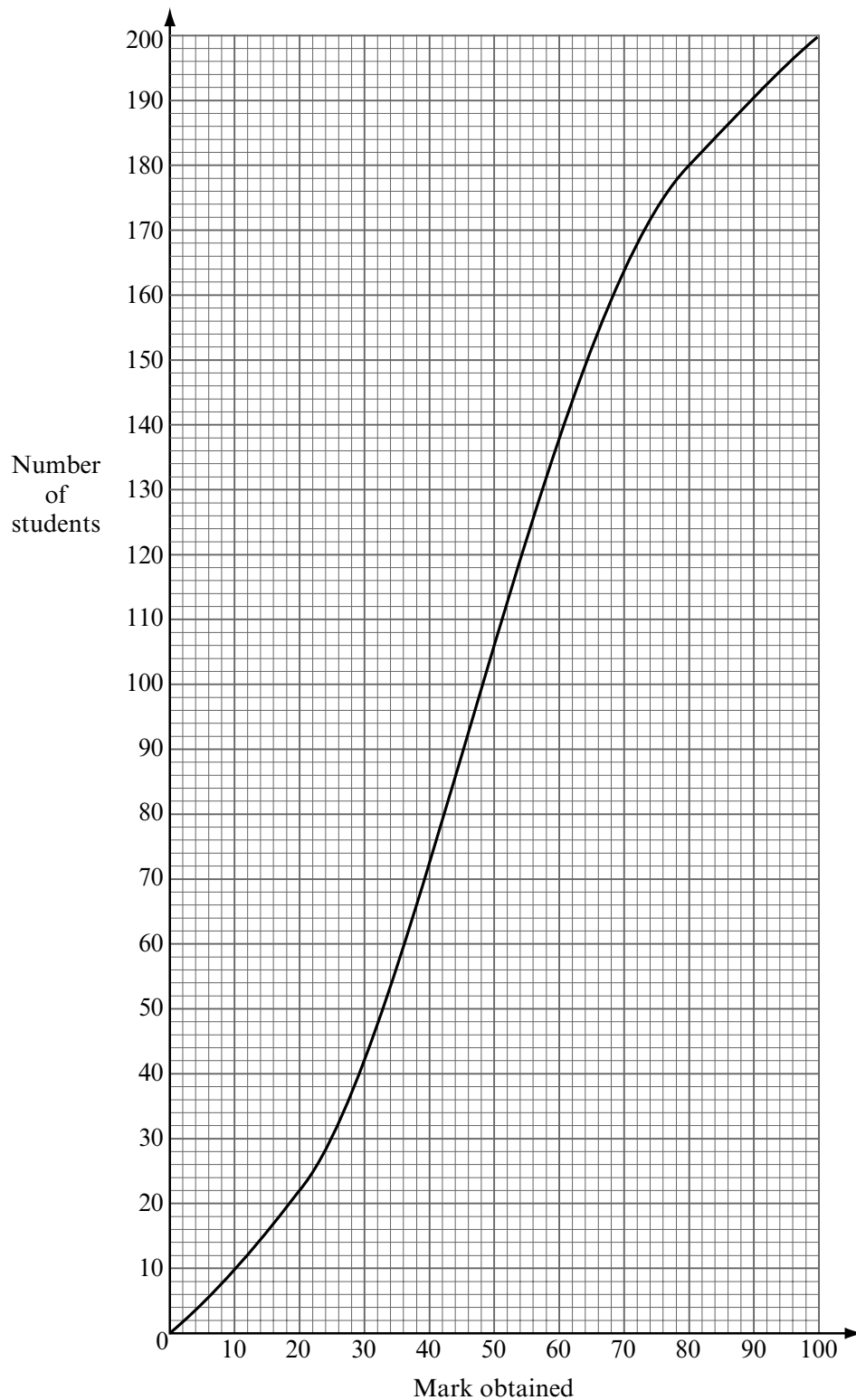
A student measured the diameters of 80 snail shells. His results are shown in the following cumulative frequency graph. The lower quartile (LQ) is 14 mm and is marked clearly on the graph.



- (a) On the graph, mark clearly in the same way and write down the value of
- (i) the median;
  - (ii) the upper quartile.
- (b) Write down the interquartile range.

# Stats 1

- 5) The cumulative frequency curve below shows the marks obtained in an examination by a group of 200 students.



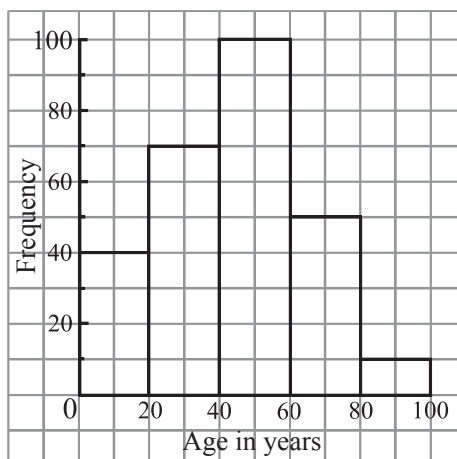
- (a) Use the cumulative frequency curve to complete the frequency table below.

Mark ( $x$ )	$0 \leq x < 20$	$20 \leq x < 40$	$40 \leq x < 60$	$60 \leq x < 80$	$80 \leq x < 100$
Number of students	22				20

- (b) Forty percent of the students fail. Find the pass mark.

## Stats 1

- 6) The histogram below represents the ages of 270 people in a village.



- (a) Use the histogram to complete the table below.

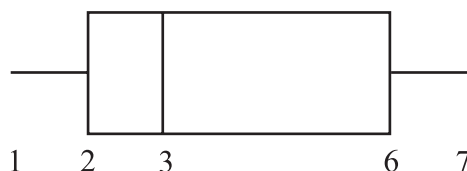
[2 marks]

Age range	Frequency	Mid-interval value
$0 \leq \text{age} < 20$	40	10
$20 \leq \text{age} < 40$		
$40 \leq \text{age} < 60$		
$60 \leq \text{age} < 80$		
$80 \leq \text{age} \leq 100$		

- (b) Hence, calculate an estimate of the mean age.

[4 marks]

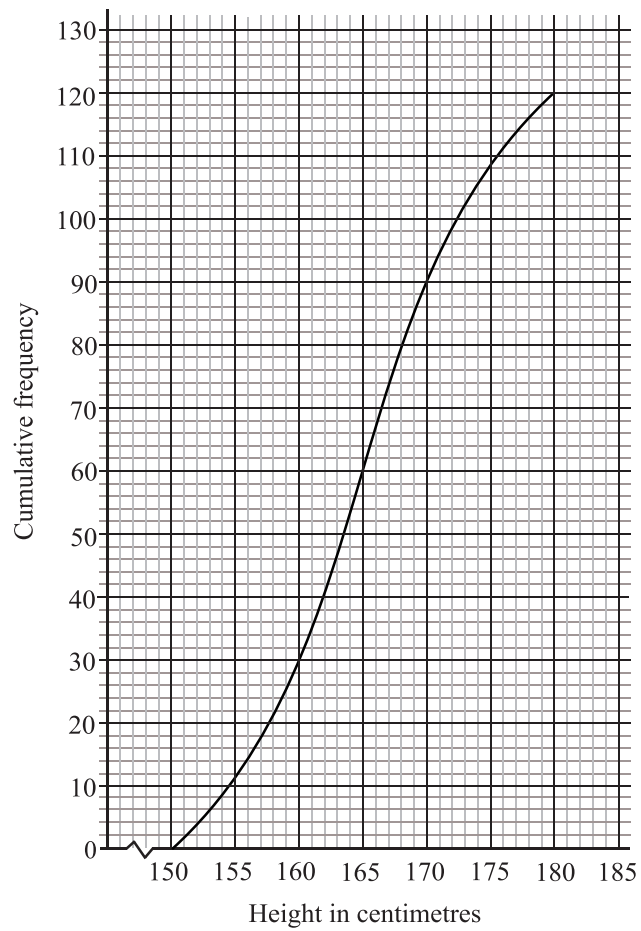
- 7) The box and whisker diagram shown below represents the marks received by 32 students.



- (a) Write down the value of the median mark.
- (b) Write down the value of the upper quartile.
- (c) Estimate the number of students who received a mark greater than 6.

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- 8) The cumulative frequency graph below shows the heights of 120 girls in a school.



- (a) Using the graph
- write down the median;
  - find the interquartile range.
- (b) Given that 60 % of the girls are taller than  $a$  cm, find the value of  $a$ .

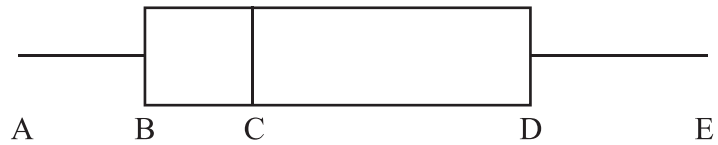
## Stats 1

9)

A set of data is

18, 18, 19, 19, 20, 22, 22, 23, 27, 28, 28, 31, 34, 34, 36.

The box and whisker plot for this data is shown below.



(a) Write down the values of A, B, C, D and E.

A = ..... B = ..... C = ..... D = ..... E = .....

(b) Find the interquartile range.