Aural Test – Statistics

1 Match each data collection method to one set of data.

2 Jess wants to know the number of people who live in her street. She carries out a survey. Which two words describe the data she collects? Circle your answers.

Primary   Secondary   Discrete   Continuous

3 A grocer has 100 boxes of strawberries. He weighs 10 of the boxes. Which three words describe the data he collects? Circle your answers. continuous discrete sample primary secondary

Name a suitable sampling method to obtain 10 boxes to represent the 100 boxes. Briefly describe how to carry out your method.

4 Four numbers have a mean of 10. The median is 8. Two of the numbers are 1 and 5. Work out the other two numbers.

5

Amy and Ben each played a game 15 times.
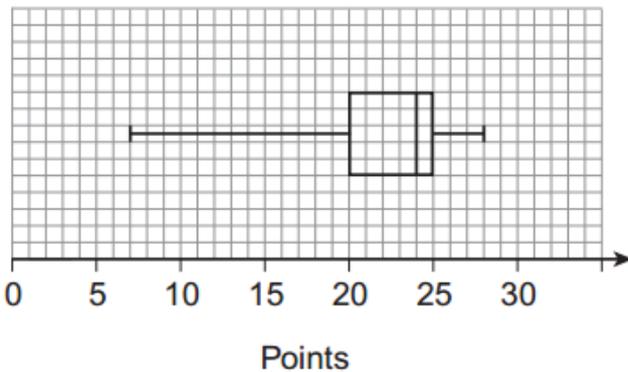The stem-and-leaf diagram shows the points scored by Amy.

Key: 3 | 0 represents 30 points

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0 | 9
1 | 2  4  5  6  8  9
2 | 1  3  3  5  7  8  8
3 | 0
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(a) Find the range of Amy's scores.
(b) Find the median and quartiles

Ben

Points

Compare the scores for Amy and Ben

6 What is a stratified sample?

Here is some information about the age groups of people in a sports club.

Junior	Adult	Senior
35	220	45

A sample of size 60, stratified by age group, is taken. How many juniors in the sample?
Two people are chosen at random from the sample. Work out the probability that they are both juniors.

7

Chen records his journey times to college.

Time, t (minutes)	Frequency
$25 < t \leqslant 30$	12
$30 < t \leqslant 35$	18
$35 < t \leqslant 40$	24
$40 < t \leqslant 45$	6
	Total = 60

Write down a calculation to calculate the mean mark?
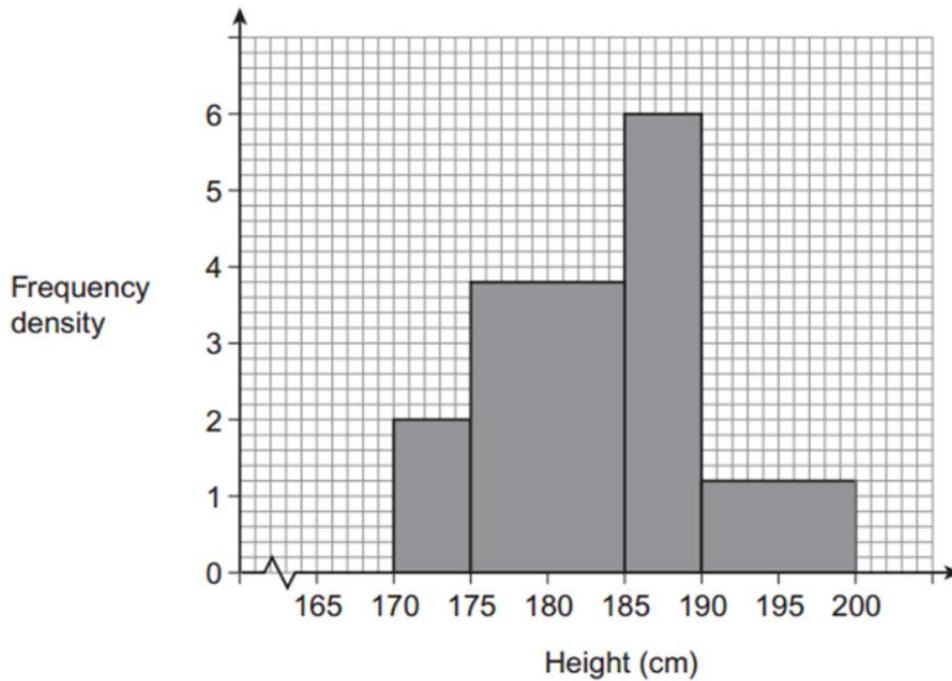Explain why your answer is an estimate.

8

The grouped frequency table represents the speeds of the 1000 cars.

Speed, s (mph)	Frequency
$18 \leqslant s < 20$	80
$20 \leqslant s < 25$	440
$25 \leqslant s < 30$	360
$30 \leqslant s < 40$	120

Describe how you would show the data on a histogram.

8

The histogram represents the heights of 90 firefighters.

Frequency density

Height (cm)

Which of the four bars represents the greatest number of firefighters?
You **must** show your working.

How would you estimate the mean height?

The tallest firefighter was 195.6 cm. The shortest firefighter was 170.4 cm. Both heights are given to 1 decimal place. Work out the maximum possible difference in their heights.

10

The table shows information about the marks of 500 students.

Mark, m	Frequency	Cumulative frequency
$15 < m \leqslant 40$	80	80
$40 < m \leqslant 60$	220	
$60 < m \leqslant 80$	125	
$80 < m \leqslant 100$	75	

Complete the cumulative frequency column.
What are the coordinates of the points you would plot on the cumulative frequency curve?

What is the greatest possible value for the range of the marks?
What is the least possible value for the range of the marks?

Waist measurements of 40 men

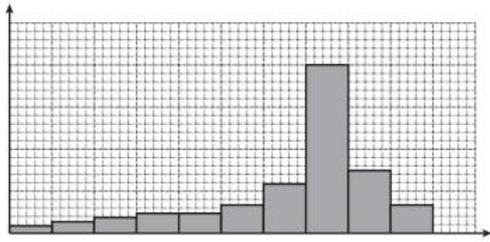
Cumulative frequency

Waist measurement (cm)
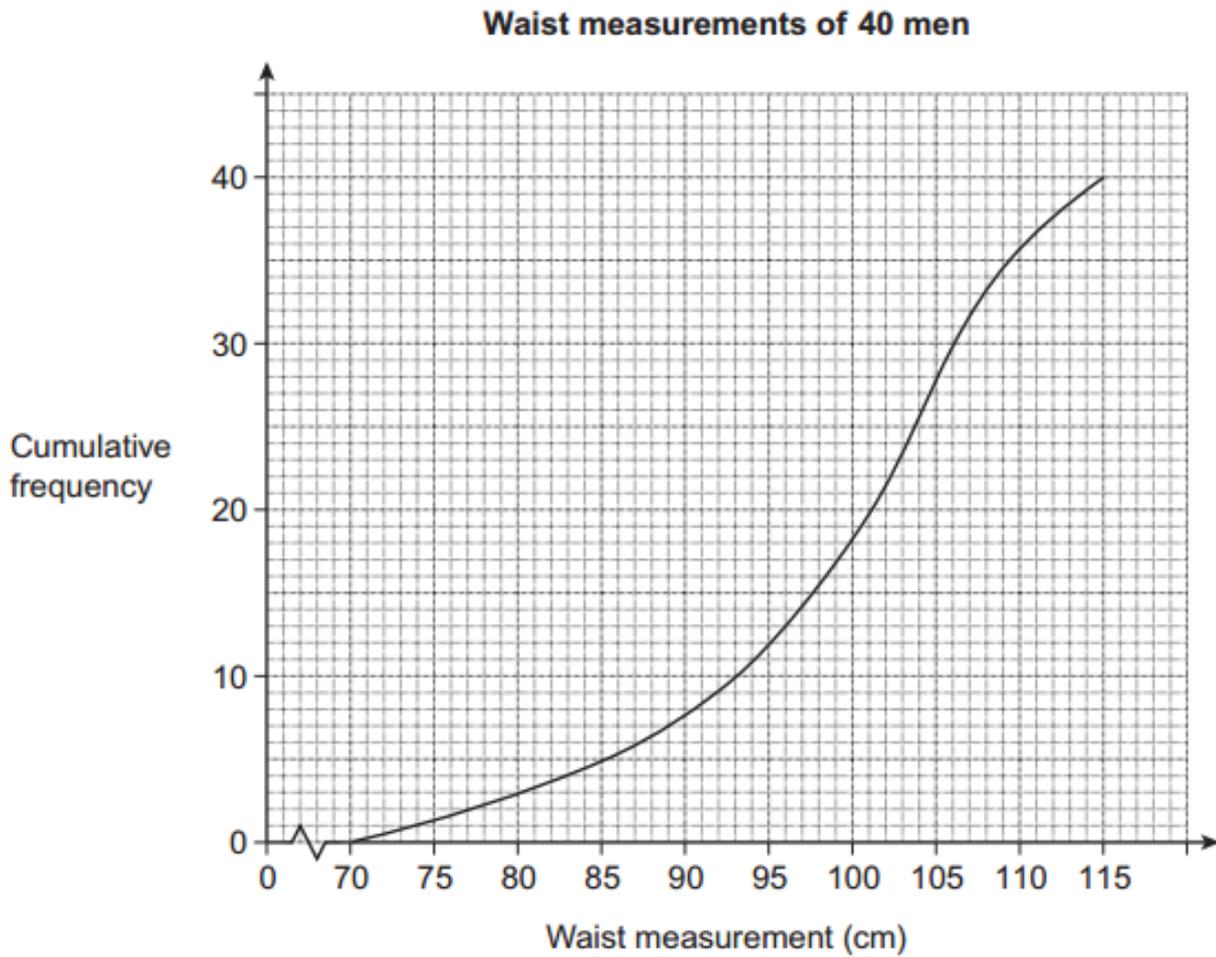
How many men have a waist measurement of 85 cm or less?

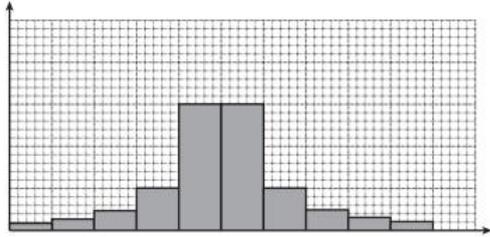How many men have a waist measurement of 85 cm or **more**?

What is the median waist measurement?

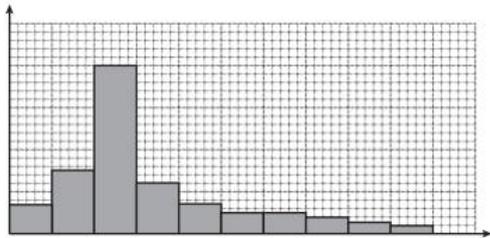What is the interquartile range of the waist measurements?

Here are the histograms for four different sets of data.
Each set of data has the same number of values.
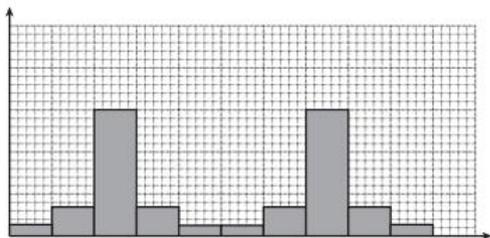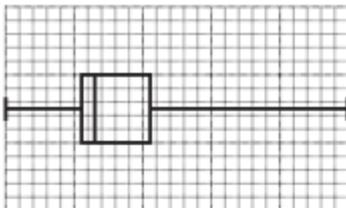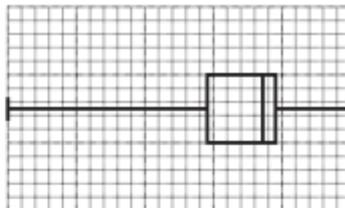

Histogram 1

Histogram 2

Histogram 3

Histogram 4
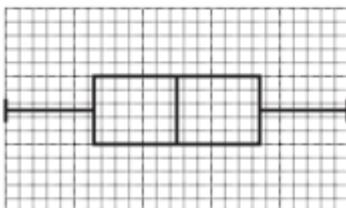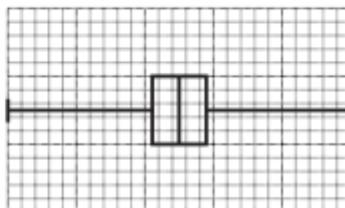
match each box plot to a histogram

Box plot A

Box plot B

Box plot C

Box plot D

13

A researcher wants to compare the ages of viewers of BBC 1 and Sky 1.
Write a suitable hypothesis.

He writes a plan to investigate the hypothesis.

Use the Data Handling Cycle to put his plan in the correct order.

A   Work out the mean age for each channel.

B   Select some television viewers to ask.

C   Compare the results and comment on the hypothesis.

D   Collect data about the ages of the television viewers.

14 The sections of a fair spinner are red, white or blue. The spinner is spun 40 times.

Red	White	Blue	Total
28	9	3	40

Write down the relative frequency of the spinner landing on red.

The spinner has 10 equal sections. Work out the most likely number of sections for each colour.

15

A gardener plants ten seeds each week from the same seed packet.
The graph shows the relative frequency of seeds that germinate.
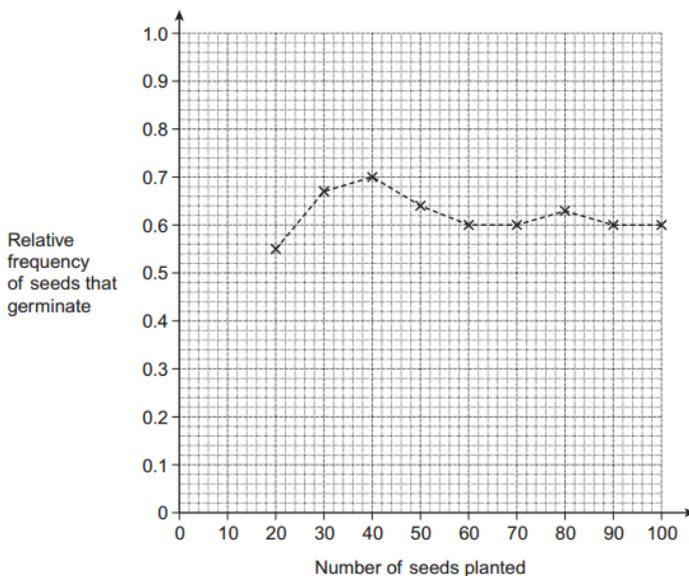
Given that nine seeds out of the ten planted in the first week germinate.
(a)(i) Write down the relative frequency of seeds planted in the first week that germinate.
(a) (ii) Plot your relative frequency on the graph.
(b) How many of the seeds planted in week 2 germinate?
(c) How many of the 100 seeds are expected to germinate?
(d)There are 130 seeds in the seed packet. The label on the packet states: Is this statement fair? Show how you decide.