1. Nov/2022/Paper_0580_11/No.10

The birth weights, in kg, of 11 babies are recorded.

2.1 1.6 2.7 4.2 4.0 2.2 3.1 1.7 2.6 3.3 3.7

(a) Complete the stem-and-leaf diagram to show this information.

1	
2	
3	
4	

Key: 2 | 1 represents 2.1 kg

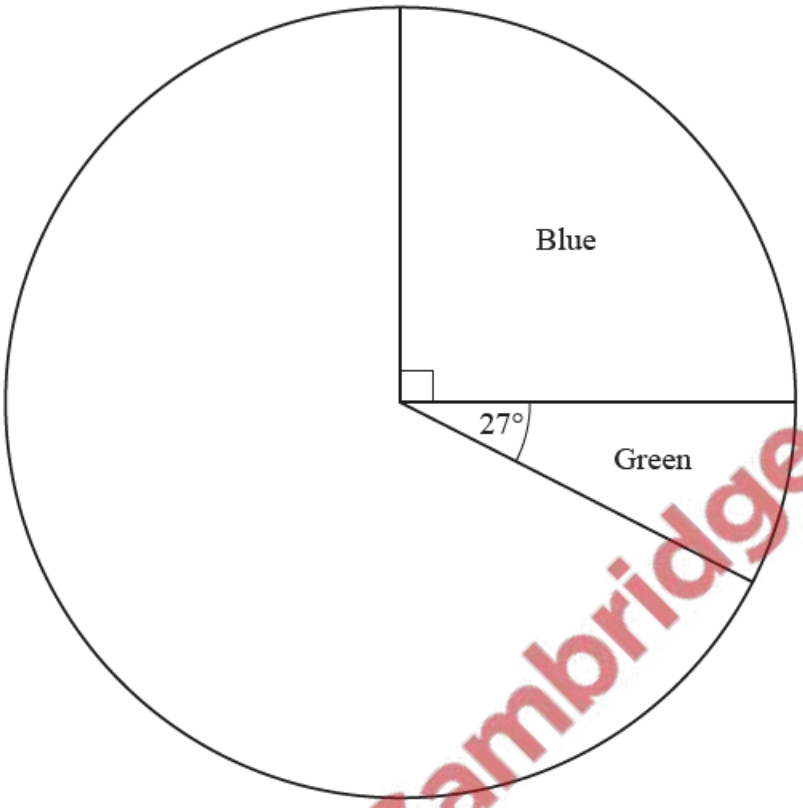
[2]

(b) Find the median.

..... kg [1]

2. Nov/2022/Paper_0580_11/No.11

Victoria records the colour of each of 240 cars leaving a car park.
Some of this information is shown in the pie chart.



(a) Show that 60 cars are blue.

[1]

(b) The rest of the cars are either red or white.
110 cars are red.

Complete the pie chart to show this information.

[2]

3. Nov/2022/Paper_0580_12/No.3

A football team has 16 players at a training session.
Kim records the colour of each of their shirts.

Blue	Silver	Green	Green	Silver	Silver	Red	Silver
Green	Red	Silver	Silver	Blue	Green	White	Blue

Complete the frequency table.
You may use the tally column to help you.

Colour	Tally	Frequency
Blue		
Green		
Red		
Silver		
White		

[2]

4. Nov/2022/Paper_0580_12/No.13

Daryl records the number of hours in a week 8 people spend exercising.

5 2 1.5 3 18 4.5 2 4

(a) Find the median.

..... h [2]

(b) Explain why the mean may not be a suitable average to use.

..... [1]

5. Nov/2022/Paper_0580_13/No.5

The stem-and-leaf diagram shows the marks scored by each of 35 students in a science test.

2	7 8 8 9
3	0 2 2 4 5 7 8 9
4	1 1 2 3 4 5 7 8 9 9
5	0 2 3 5 5 5 6 7 7 8
6	1 2 4

Key: 2 | 7 represents 27

(a) Find the range.

..... [1]

(b) Find the mode.

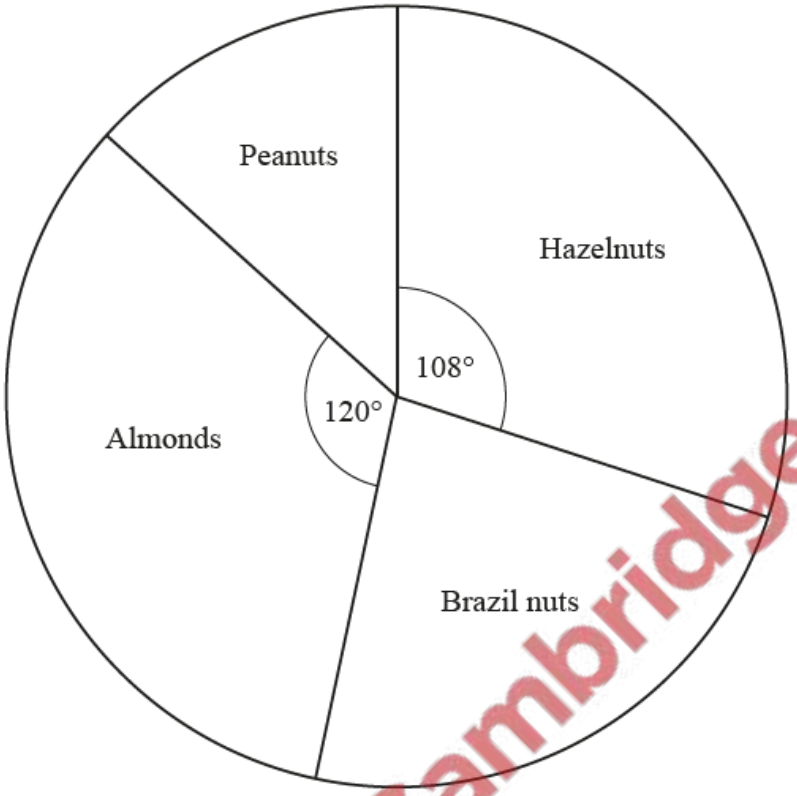
..... [1]

(c) Find the median.

..... [1]

6. Nov/2022/Paper_0580_13/No.7

Jo counts the number of each type of nut in a bag.
The pie chart shows the results.



(a) Measure the size of the angle for the peanuts.

..... [1]

(b) What fraction of the nuts are almonds?
Give your answer in its simplest form.

..... [1]

(c) There are 45 hazelnuts in the bag.

Calculate the total number of nuts in the bag.

..... [2]

7. Nov/2022/Paper_0580_22/No.8

The volumes of two mathematically similar objects are $56\,cm^3$ and $875\,cm^3$.
The height of the smaller object is 18 cm.

Find the height of the larger object.

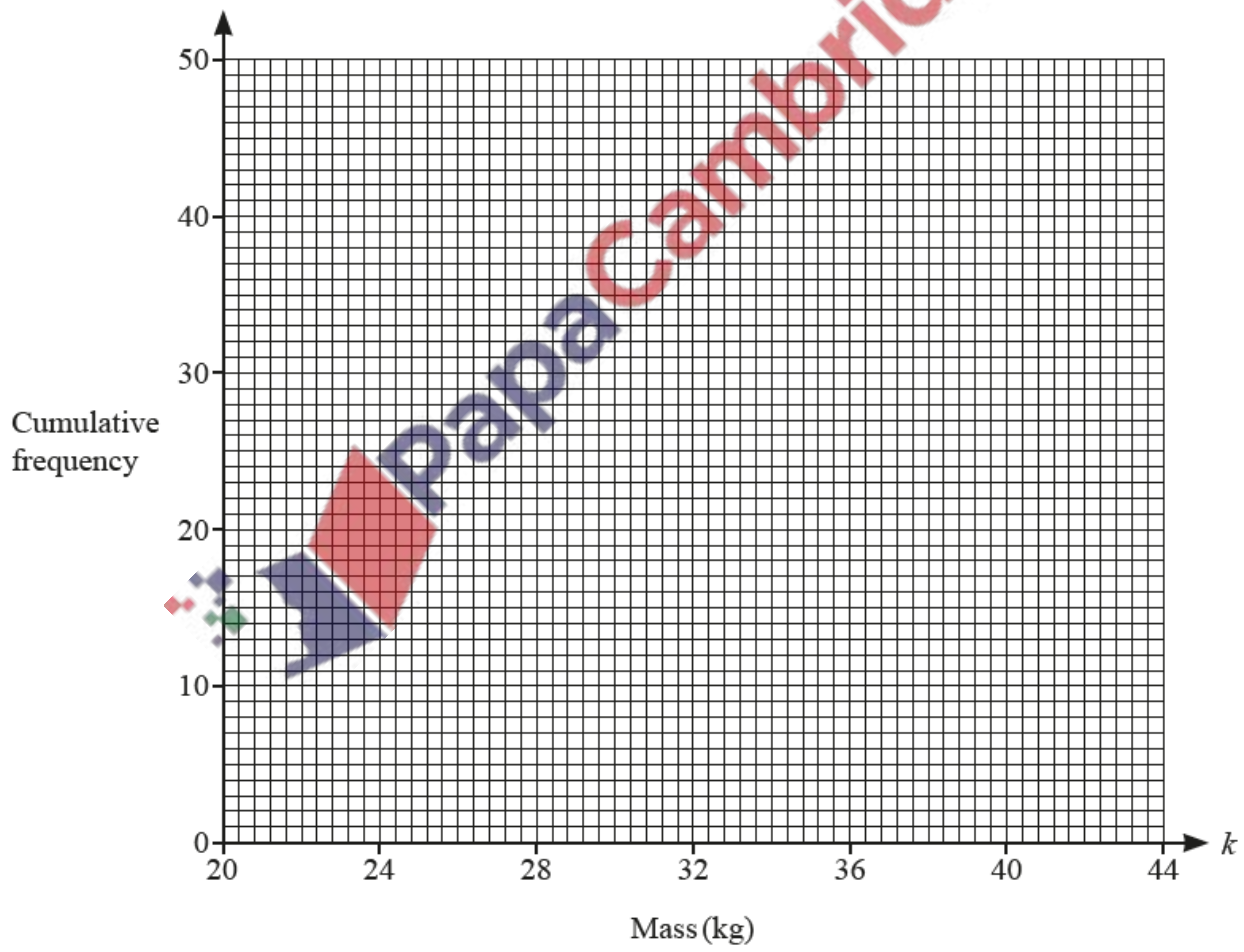
..... cm [3]

8. Nov/2022/Paper_0580_22/No.13

The table shows information about the mass of each of 50 children.

Mass (k kg)	Cumulative Frequency
$k \leqslant 20$	0
$k \leqslant 22$	7
$k \leqslant 24$	23
$k \leqslant 28$	35
$k \leqslant 32$	43
$k \leqslant 36$	47
$k \leqslant 42$	50

(a) Draw a cumulative frequency diagram to show this information.



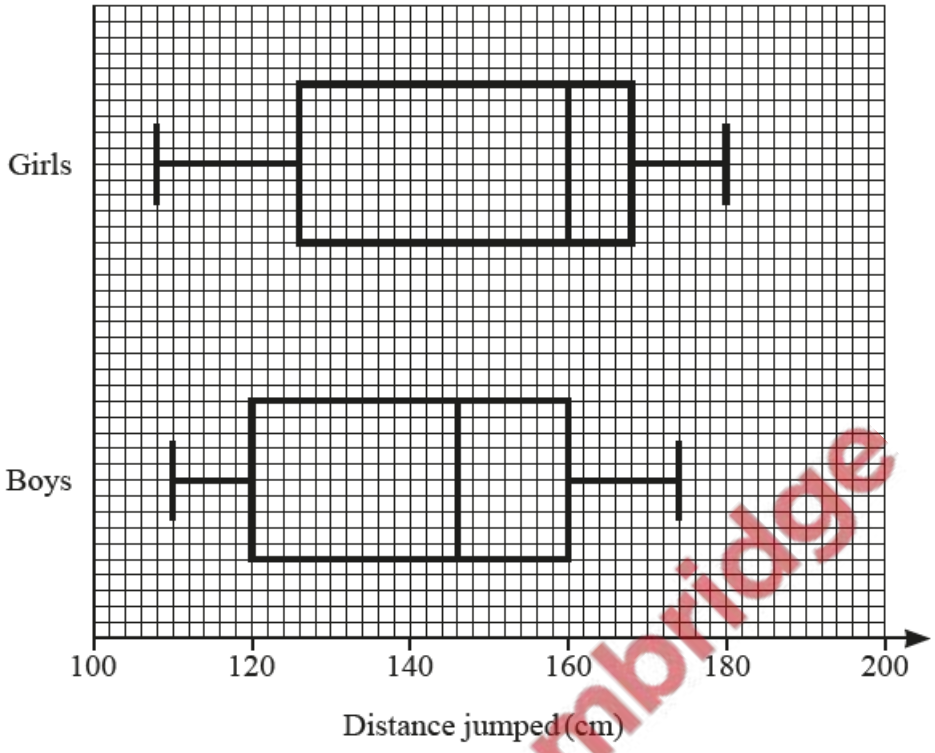
[3]

(b) Use your graph to find an estimate of the 90th percentile.

..... [1]

9. Nov/2022/Paper_0580_22/No.14

136 girls and 144 boys each measure the distance they jump in centimetres.
The box-and-whisker plots show the distributions of these distances.



Each child who jumps a distance greater than 160 cm gets a certificate.

Work out an estimate of the total number of children who get a certificate.

..... [2]

10. Nov/2022/Paper_0580_23/No.4

The mean mass of four men in a rowing team is 97.5 kg.
The modal mass is 101 kg.
The range of the masses is 8 kg.

Find the mass of each of the four men.

..... kg , ... kg , ... kg, ... kg [3]

(d) Miguel records the length of time of each telephone call he receives, correct to the nearest minute.

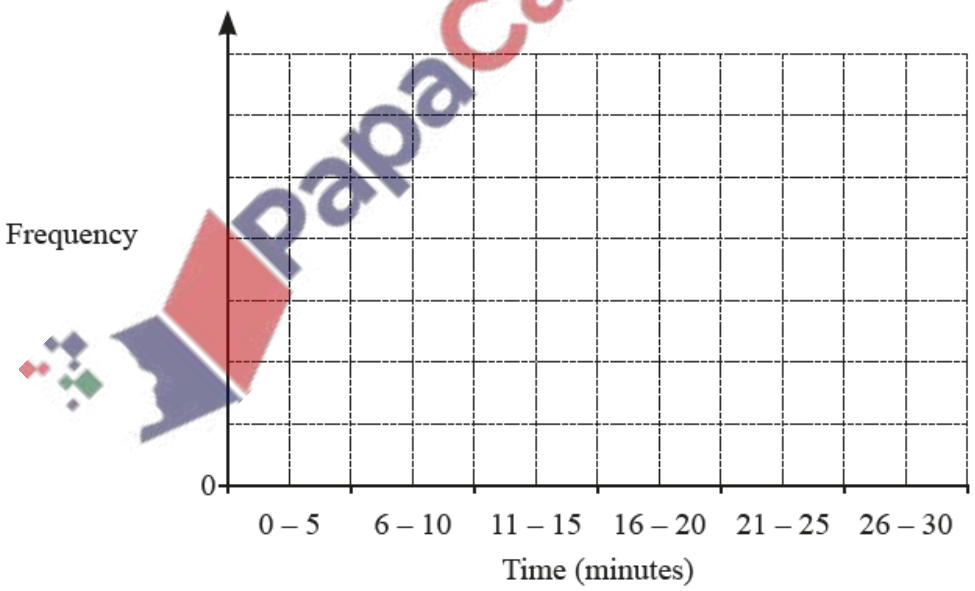
7	15	6	28	8	21	17	19	20	12
11	19	12	3	20	23	14	9	4	18

(i) Complete the frequency table.
You may use the tally column to help you.

Time (minutes)	Tally	Frequency
0 – 5		
6 – 10		
11 – 15		
16 – 20		
21 – 25		
26 – 30		

[2]

(ii) Draw a bar chart to show this information.
Complete the scale on the frequency axis.



[3]

(iii) Use the bar chart to write down the modal group.

..... — ..... [1]

12. Nov/2022/Paper_0580_31/No.5(a)

(a) The table shows the number of items sold to each of 60 customers in a shop.

Number of items sold	Frequency
0	3
1	6
2	12
3	8
4	14
5	10
6	3
7	4

(i) Find the range.

..... [1]

(ii) Calculate the mean.

..... [3]

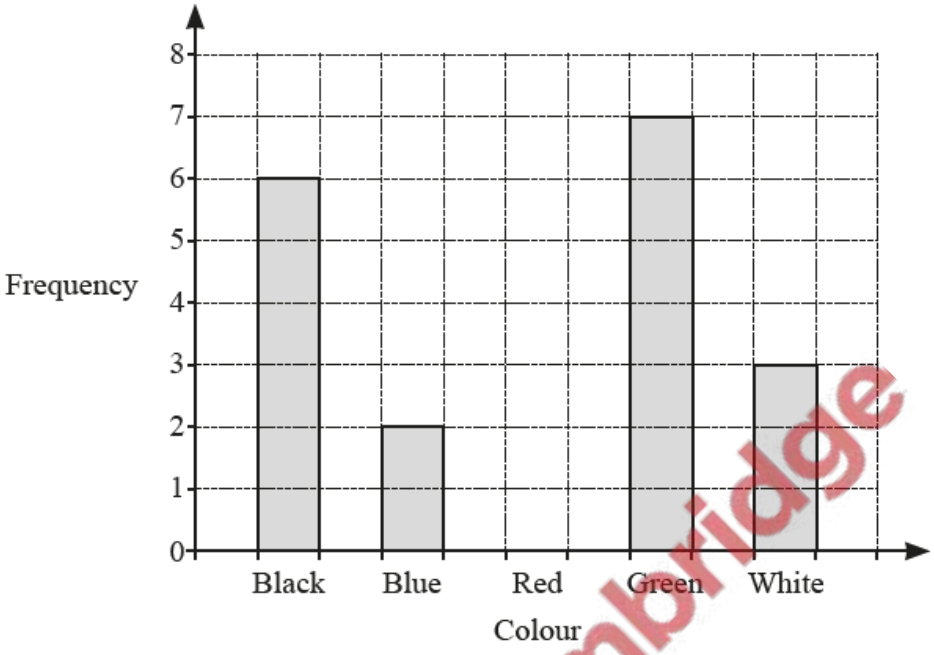
(iii) Find the probability that a customer picked at random buys more than 4 items.

..... [2]

13. Nov/2022/Paper_0580_32/No.3

24 people own a car.

(a) Ranjit asks each of these 24 people the colour of their car.
The bar chart shows some of these results.



(i) Complete the bar chart by drawing the bar for the colour red.

[2]

(ii) Write down the mode.

..... [1]

(iii) How many more people have a green car than have a blue car?

..... [1]

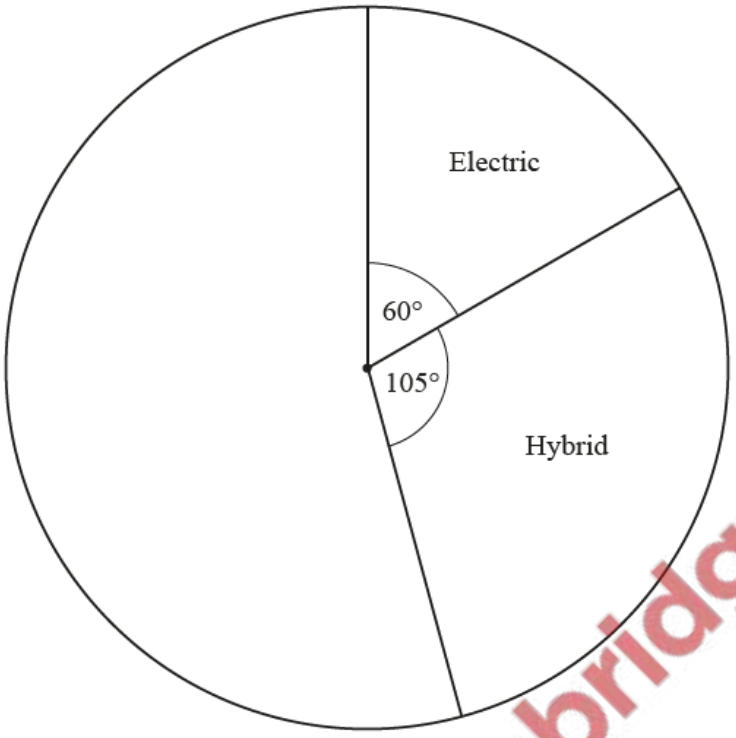
(b) The table shows the size, in litres, of each of the 24 car engines.

Engine size (litres)	0.8	1.2	1.5	1.8	2.4
Frequency	7	4	5	6	2

Calculate the mean.

..... litres [3]

(c) Ranjit also asks each of the 24 people what type of car they have.
The pie chart shows some of these results.



(i) Work out the number of hybrid cars.

..... [2]

(ii) The rest of the cars are either petrol or diesel.
There are 8 petrol cars.

Complete the pie chart to show this information.

[2]

14. Nov/2022/Paper_0580_33/No.2(a)

(a) The population of Alaska is 735 720.

(i) Write this number in words.

.....

..... [1]

(ii) The land area of Alaska is 1 477 300 square kilometres.

Work out the average number of people per square kilometre.

..... [1]

(iii) In Alaska, the city with the highest population is Anchorage with 291 830 people.

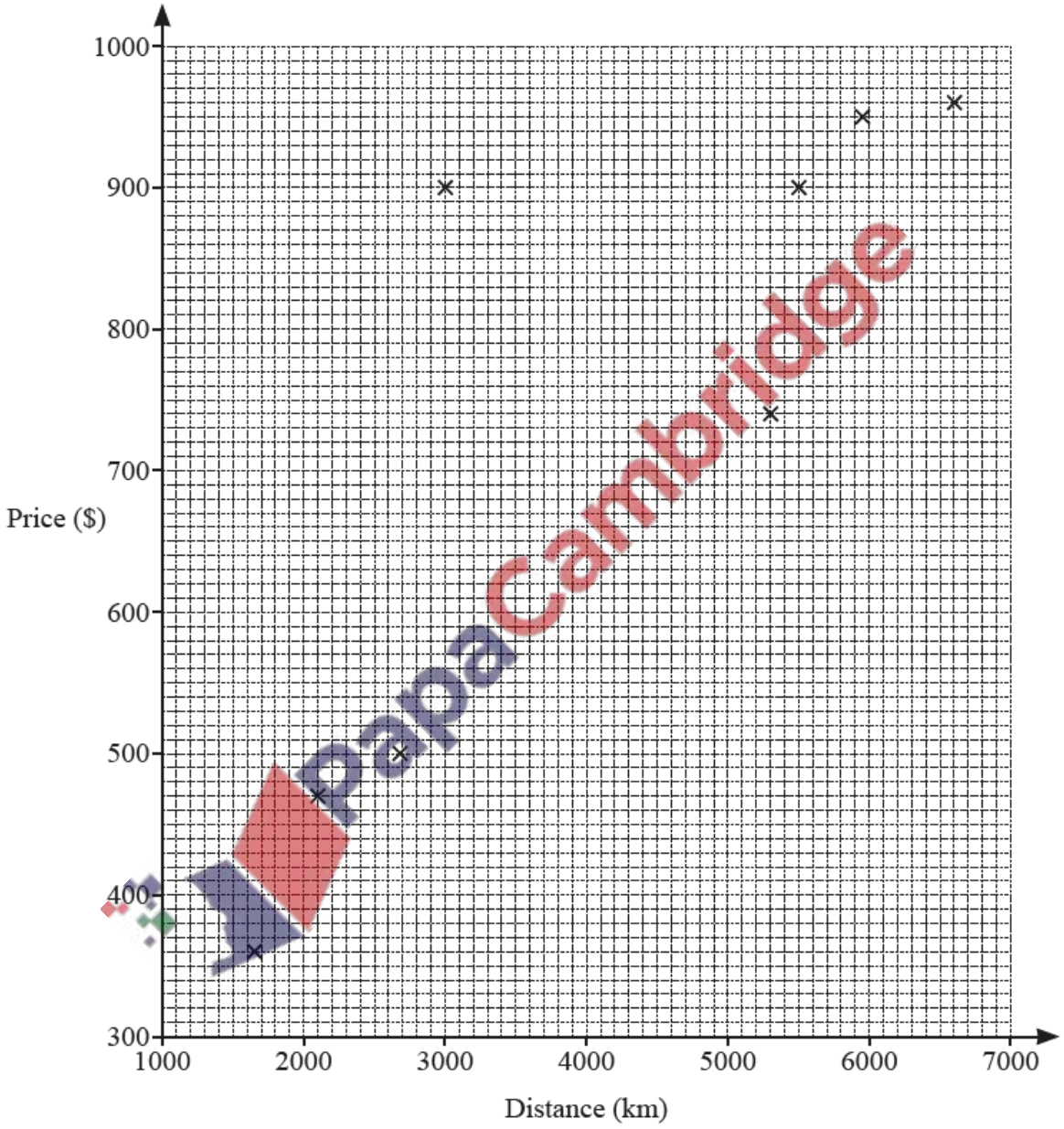
What percentage of the population of Alaska live in Anchorage?

..... % [1]

15. Nov/2022/Paper_0580_33/No.7

(a) The table shows the distance, in km, a plane travels and the ticket price, in dollars, for each of 10 flights.

Distance (km)	1650	2675	3000	5300	6600	2100	5500	5950	3850	2900
Price ($)	360	500	900	740	960	470	900	950	715	530



(i) Complete the scatter diagram.
The first eight points have been plotted for you. [1]

(ii) What type of correlation is shown on the scatter diagram?

..... [1]

(iii) On one flight, the ticket price is much more expensive per kilometre travelled than on all of the other flights.

Draw a ring around this point on the scatter diagram. [1]

(iv) Draw a line of best fit on the scatter diagram. [1]

(v) Another plane travels 4500 km.

Use your line of best fit to estimate the ticket price for this flight.

$ ..... [1]

(b) The ticket price for a flight is $522.
The exchange rate is 1 euro = $1.16 .

Find the ticket price in euros.

..... euros [1]

(c) A plane travels 939 km from London to Copenhagen.

(i) This flight takes 1 hour 24 minutes.

Work out the average speed in kilometres per hour.

..... km/h [2]

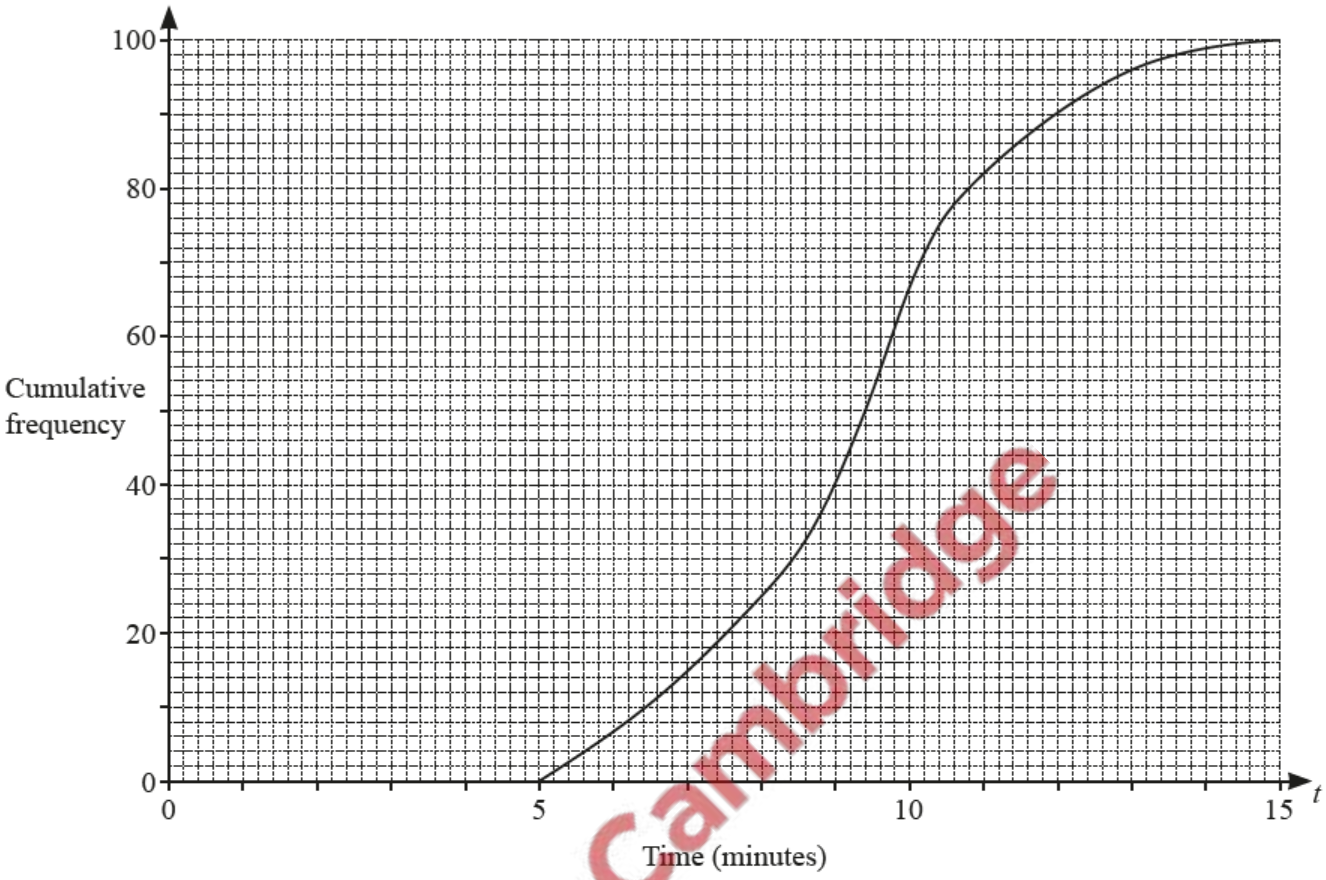
(ii) For this flight, the amount of fuel used is 3.89 kg per kilometre travelled.
Carbon emissions are 3.15 kg for each kilogram of fuel used.

Work out the carbon emissions, in kilograms, for this flight.

..... kg [2]

16. Nov/2022/Paper_0580_41/No.5

(a) 100 students each record the time, t minutes, taken to eat a pizza.
The cumulative frequency diagram shows the results.



Find an estimate of

(i) the median,

..... min [1]

(ii) the interquartile range,

..... min [2]

(iii) the number of students taking more than 11 minutes to eat a pizza.

..... [2]

(b) 150 students each record how far they can throw a tennis ball.
The table shows the results.

Distance (d metres)	$0 < d \leqslant 20$	$20 < d \leqslant 30$	$30 < d \leqslant 35$	$35 < d \leqslant 45$	$45 < d \leqslant 60$
Frequency	4	38	40	53	15

(i) Calculate an estimate of the mean.

..... m [4]

(ii) A histogram is drawn to show this information.
The height of the bar representing $30 < d \leqslant 35$ is 12 cm.

Calculate the height of each of the other bars.

Distance (d metres)	Frequency	Height of bar (cm)
$0 < d \leqslant 20$	4	
$20 < d \leqslant 30$	38	
$30 < d \leqslant 35$	40	12
$35 < d \leqslant 45$	53	
$45 < d \leqslant 60$	15	

[3]

(iii) Two students are chosen at random.

Find the probability that they both threw the ball more than 45 m.

..... [2]

17. Nov/2022/Paper_0580_42/No.3

Kai and Ann carry out a survey on the distances travelled, in kilometres, by 200 cars.

Kai completes this frequency table for the data collected.

Distance ($d$km)	$80 < d \leqslant 100$	$100 < d \leqslant 150$	$150 < d \leqslant 200$	$200 < d \leqslant 300$	$300 < d \leqslant 400$
Frequency	7	33	76	52	32

(a) (i) Calculate an estimate of the mean.

..... km [4]

(ii) Ann uses this frequency table for the same data.
There is a different interval for the final group.

Distance ($d$km)	$80 < d \leqslant 100$	$100 < d \leqslant 150$	$150 < d \leqslant 200$	$200 < d \leqslant 300$	$300 < d \leqslant 360$
Frequency	7	33	76	52	32

Without calculating an estimate of the mean for this data, find the difference between Ann's and Kai's estimate of the mean.
You must show all your working.

..... km [2]

(iii) A histogram is drawn showing the information in **Kai's** frequency table.
The height of the block for the interval $200 < d \leqslant 300$ is 2.6 cm.

Calculate the height of the block for each of the following intervals.

$80 < d \leqslant 100$ ..... cm

$150 < d \leqslant 200$ ..... cm

$300 < d \leqslant 400$ ..... cm [3]

(b) One car is picked at random.

Find the probability that the car has travelled more than 300 km.

..... [1]

(c) Two of the 200 cars are picked at random.

Find the probability that

(i) both cars have travelled 150 km or less.

..... [2]

(ii) one car has travelled more than 200 km and the other car has travelled 100 km or less.

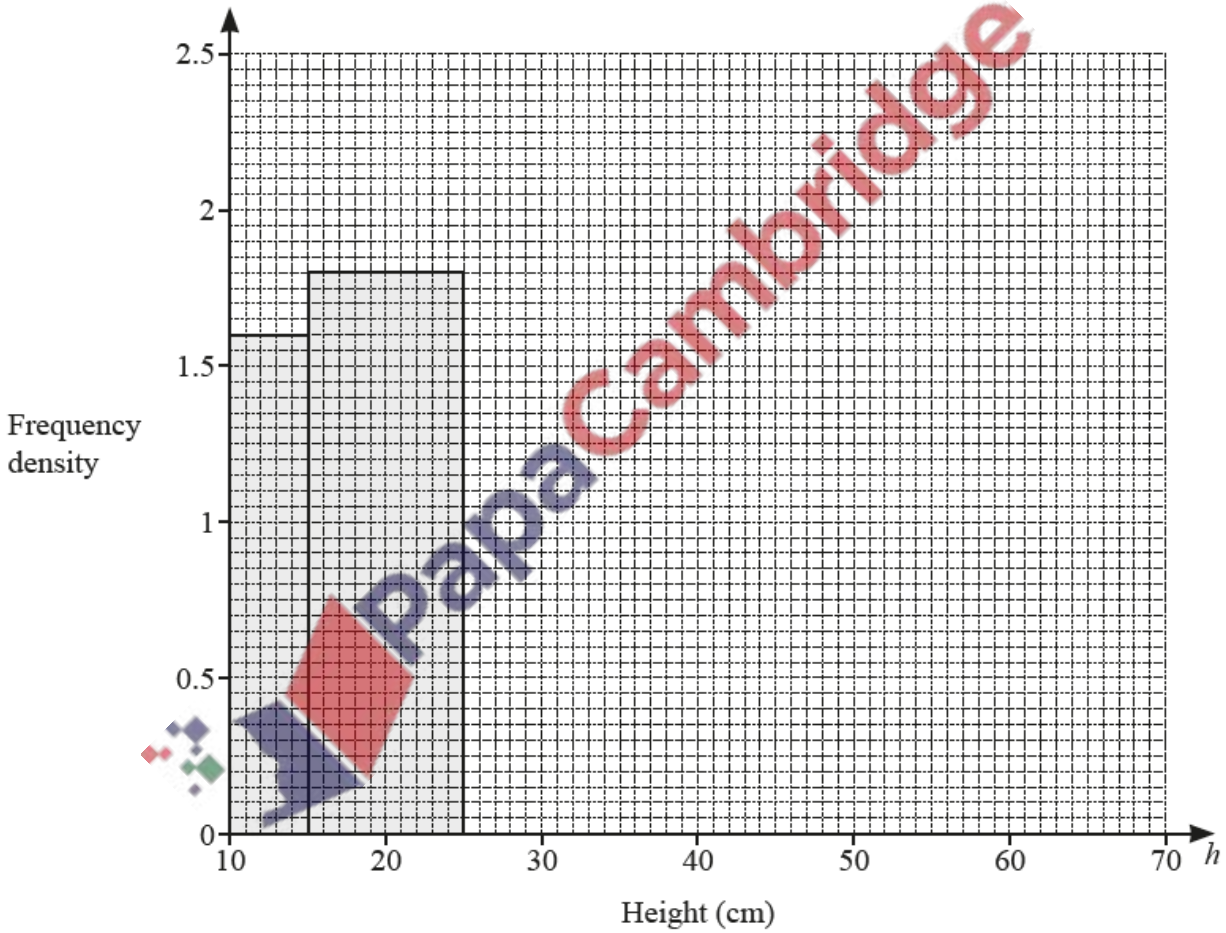
..... [3]

18. Nov/2022/Paper_0580_43/No.3

The height, h cm, of each of 100 plants is recorded.
The table shows information about the heights of these plants.

Height (h cm)	$10 < h \leqslant 15$	$15 < h \leqslant 25$	$25 < h \leqslant 40$	$40 < h \leqslant 60$	$60 < h \leqslant 70$
Frequency	8	18	28	33	13

(a) Complete the histogram to show this information.
The first two blocks have been drawn for you.



[3]

(b) Calculate an estimate of the mean height.

..... cm [4]