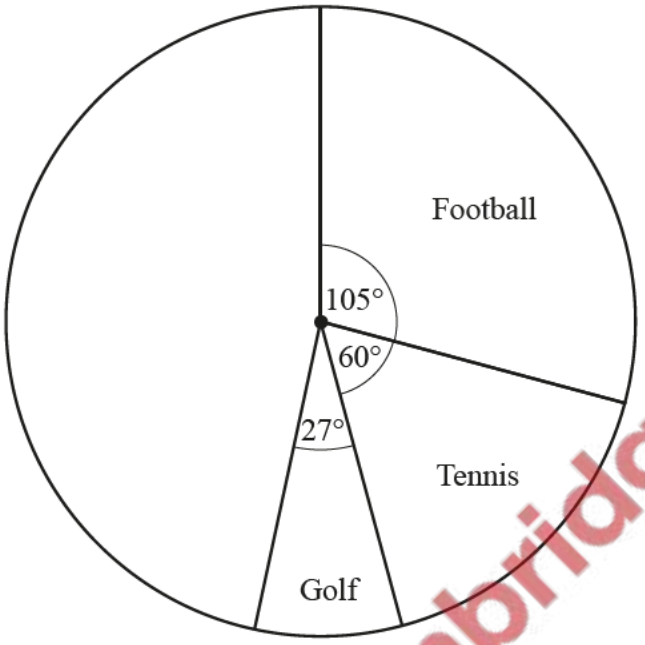
1. Nov/2021/Paper_43/No.8

(a) Jean asks 600 people to choose their favorite sport.
The pie chart shows some of this information.



(i) Show that 100 people choose tennis.

[1]

(ii) Work out how many people choose golf.

..... [2]

(iii) 125 people choose baseball and the rest choose swimming.

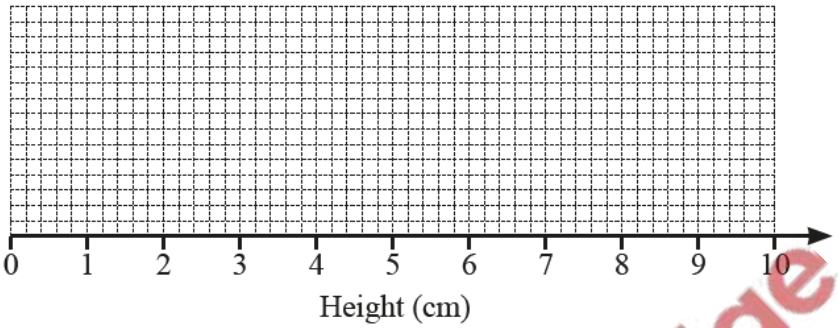
Complete the pie chart to show this information.

[2]

(b) The heights of some plants are measured:

- smallest height = 0.6 cm
- range = 8.1 cm
- median = 5.2 cm
- lower quartile = 3.4 cm
- interquartile range = 4.1 cm.

On the grid, draw a box-and-whisker plot to show this information.



[3]

(c) A dice is rolled 100 times.
The frequency table shows the results.

Score	1	2	3	4	5	6
Frequency	16	25	17	19	8	15

Find

(i) the range,

..... [1]

(ii) the mode,

..... [1]

(iii) the median.

..... [1]

(d) 50 students answer a mathematics question.
The table shows the time, t seconds, taken by each student to answer the question.

Time (t seconds)	$10 < t \leqslant 20$	$20 < t \leqslant 25$	$25 < t \leqslant 30$	$30 < t \leqslant 50$	$50 < t \leqslant 80$
Frequency	2	8	12	16	12

Calculate an estimate of the mean.

..... s [4]

2. Nov/2021/Paper_43/No.10

(a) Sarah spins a fair four-sided spinner numbered 0, 1, 1 and 3.

(i) What number is the spinner most likely to land on?

..... [1]

(ii) Sarah spins the spinner twice.

Find the probability that it lands on the number 1 both times.

..... [2]

(iii) Sarah spins the spinner until it lands on the number 3.

The probability that this happens on the nth spin is $\frac{729}{16384}$.

Find the value of n.

$n =$ ..... [2]

(b) Scott takes an examination.
The examination is in two parts, a theory test and a practical test.
Both parts must be passed to pass the examination.

The probability that Scott passes the theory test is 0.9 .
The probability that Scott passes the practical test is 0.8 .

Find the probability that

(i) Scott passes the examination,

..... [2]

(ii) Scott passes the theory test or the practical test but not both.

..... [3]

3. June/2021/Paper_21/No.2

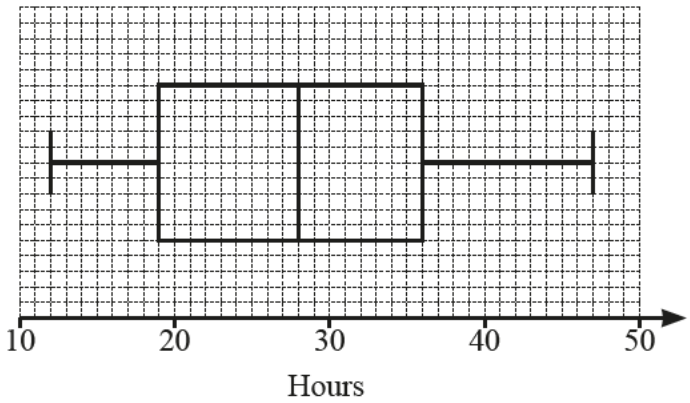
The probability that a train is late is 0.15 .

Write down the probability that the train is not late.

..... [1]

4. June/2021/Paper_21/No.3

The box plot shows the number of hours that some students studied last week.



Find

(a) the range,

..... h [1]

(b) the median,

..... h [1]

(c) the interquartile range.

..... h [1]

5. June/2021/Paper_21/No.18

A bag contains 3 blue buttons, 8 white buttons, and 5 red buttons.
Two buttons are picked at random from the bag, without replacement.

Work out the probability that the two buttons are either both red or both white.

..... [3]

6. June/2021/Paper_41/No.9

(a) The table shows information about the mass, in kilograms, of each of 50 children.

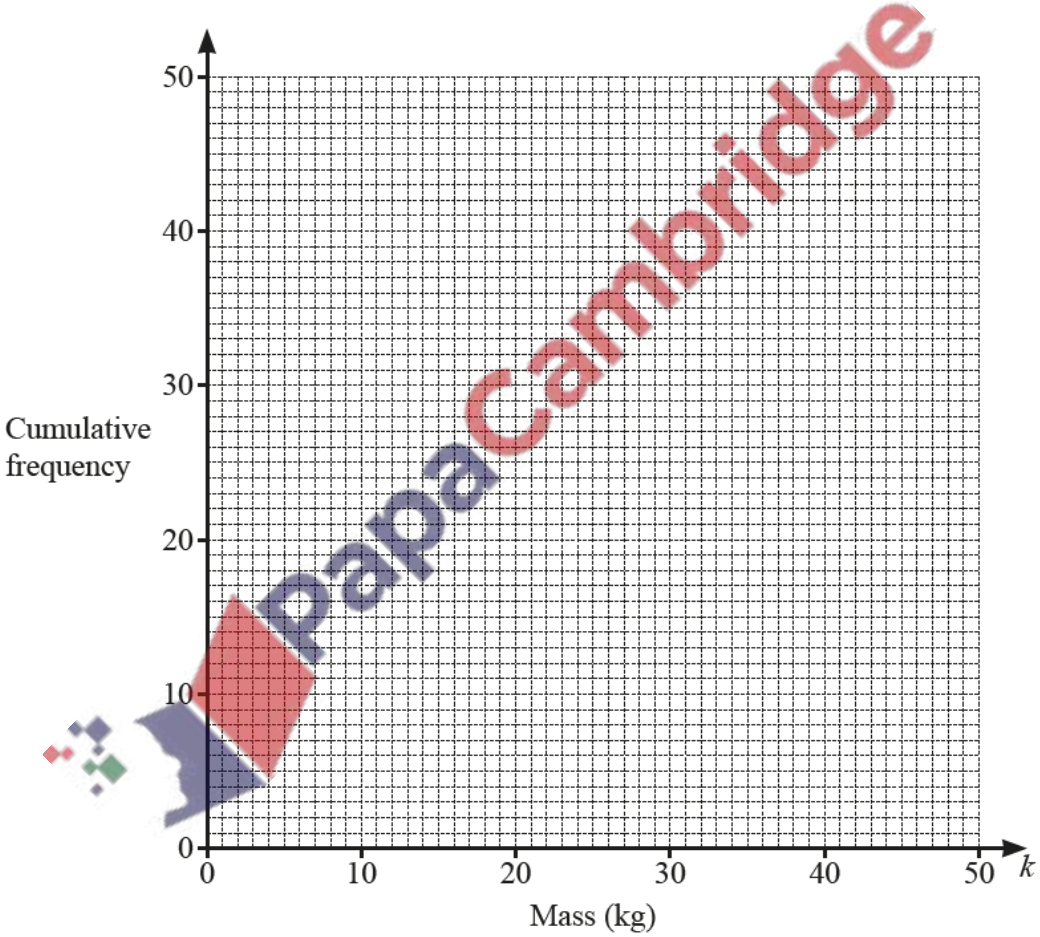
Mass ($k$kg)	$0 < k \leqslant 10$	$10 < k \leqslant 25$	$25 < k \leqslant 35$	$35 < k \leqslant 40$	$40 < k \leqslant 50$
Frequency	3	19	21	5	2

(i) Complete the cumulative frequency table.

Mass ($k$kg)	$k \leqslant 10$	$k \leqslant 25$	$k \leqslant 35$	$k \leqslant 40$	$k \leqslant 50$
Cumulative frequency					

[2]

(ii) On the grid, draw a cumulative frequency curve to show this information.



[3]

(iii) Use your diagram to find an estimate of the number of children with a mass of 32 kg or less.

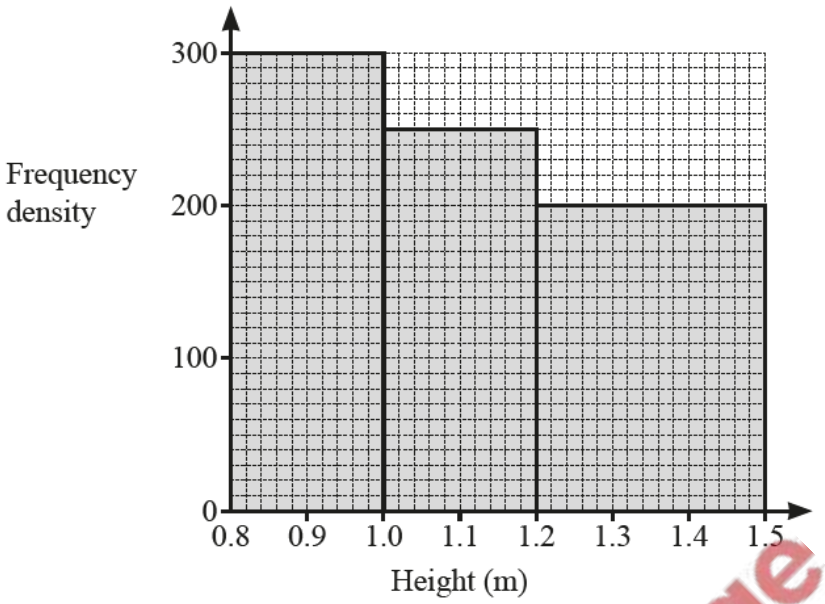
..... [1]

(iv) Two of the 50 children are chosen at random.

Find the probability that one child has a mass of 25 kg or less and the other child has a mass of more than 25 kg.
Give your answer correct to 3 decimal places.

..... [3]

(b)



The histogram shows information about the heights, in meters, of 170 children.

Calculate an estimate of the mean height.

..... m [5]