1 The table gives information about the length of time, in minutes, that each of 60 students took to travel to school on Monday.

Length of time (t minutes)	Frequency
$0 < t \leqslant 10$	4
$10 < t \leqslant 20$	10
$20 < t \leqslant 30$	15
$30 < t \leqslant 40$	25
$40 < t \leqslant 50$	6

modal class

(a) Write down the modal class interval.

Modal Class = class with highest frequency

$30 < t \leqslant 40$ (1)

.....

(1)

(b) Work out an estimate for the mean length of time taken by these 60 students to travel to school on Monday.
Give your answer correct to one decimal place.

$\text{Mean} = \frac{\Sigma fx}{\Sigma f}$

interval midpoint x frequency for each class

$$\text{Mean} = \frac{(5 \times 4) + (15 \times 10) + (25 \times 15) + (35 \times 25) + (45 \times 6)}{60} \quad (1)$$

$$= \frac{20 + 150 + 375 + 875 + 270}{60} \quad (1)$$

$$= \frac{1690}{60} \quad (1)$$

$$= 28.2 \ (1 \text{ d.p.}) \quad (1)$$

28.2 ..... minutes

(4)

(Total for Question 1 is 5 marks)

2 The frequency table gives information about the ages of the 80 people in a train carriage.

Age (a years)	**Frequency**
$0 < a \leqslant 20$	9
$20 < a \leqslant 30$	19
$30 < a \leqslant 40$	17
$40 < a \leqslant 50$	18
$50 < a \leqslant 60$	13
$60 < a \leqslant 70$	4

(a) Complete the cumulative frequency table.

Age (a years)	**Cumulative frequency**
$0 < a \leqslant 20$	9
$0 < a \leqslant 30$	28
$0 < a \leqslant 40$	45
$0 < a \leqslant 50$	63
$0 < a \leqslant 60$	76
$0 < a \leqslant 70$	80

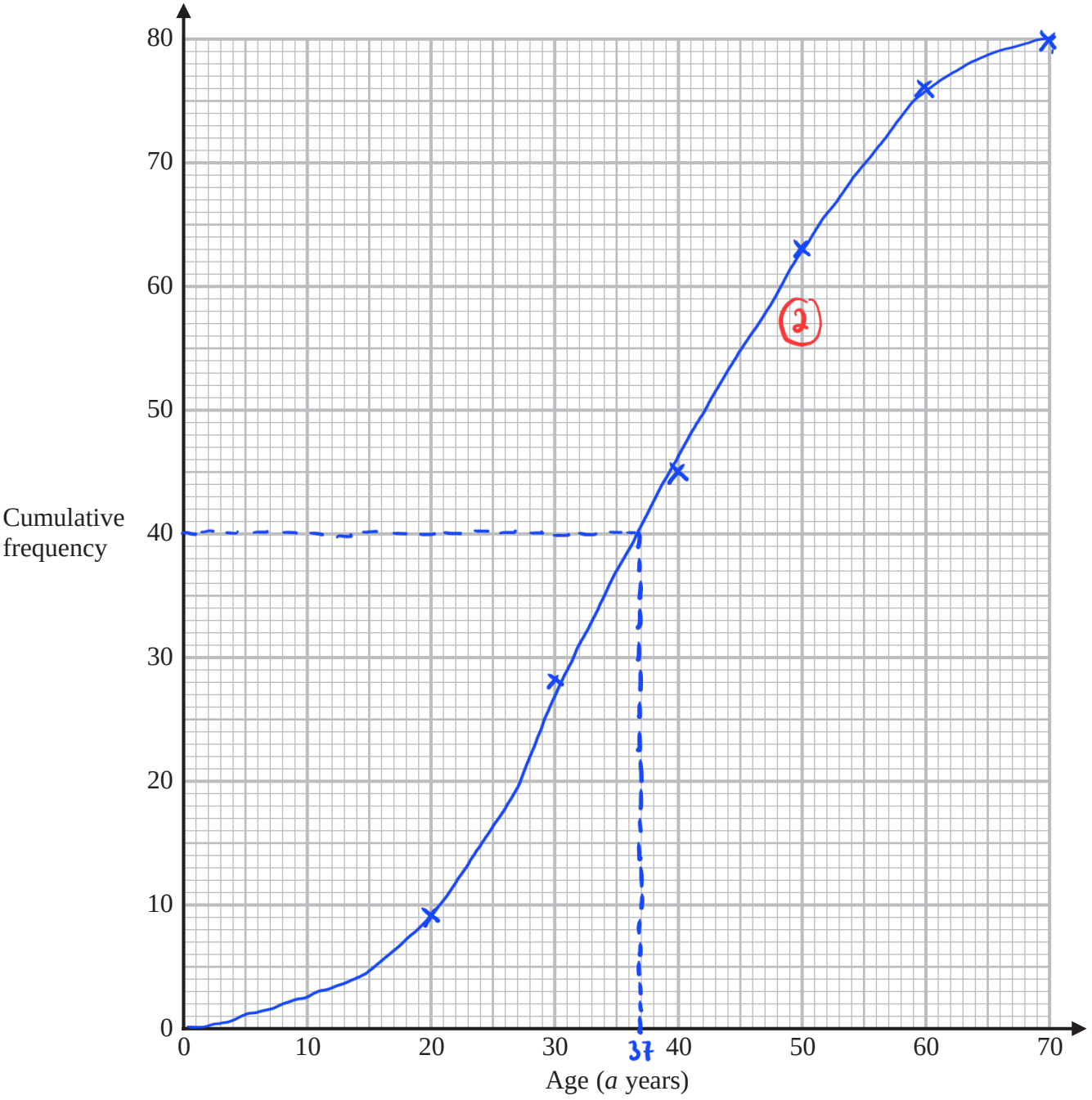
9 + 19 = 28

28 + 17 = 45

⋮ etc

(1)

(b) On the grid, draw a cumulative frequency graph for your table.



(2)

(c) Use your graph to find an estimate for the median age of the people in the train carriage.

median = $\frac{80}{2}$ = 40 (from graph)

37 ..... years

2

(2)

(Total for Question 2 is 5 marks)

3 Alexa has five cards.
Each card has a number on it.

The table gives information about the numbers on the five cards.

Total	Median	Mode	Range
45	8	5	10

Using the information in the table, complete each card by writing its number on it.

Median : 8 (means two number smaller and two number larger than 8)

Mode : 5 (means appear the most . since 8 is median, there are two 5s)

Range : 10 . (since 5 is the smallest number, largest number is 15)

Total : 45 . The remaining card is 45 - 5 - 5 - 8 - 15 = 12

5	5	8	12	15

(3)

(Total for Question 3 is 3 marks)

4 Alison buys 2 boxes of strawberries, box **A** and box **B**.

Box **A** contains 15 strawberries.
The strawberries in box **A** have a mean weight of 24 grams.

Box **B** contains 25 strawberries.
The strawberries in box **B** have a mean weight of 18 grams.

Alison puts all 40 strawberries into a bowl.
Work out the mean weight of the 40 strawberries.

mean = total weight / no. of strawberry

Calculating total weight of box A :

$24 \times 15 = 360$ g

Calculating total weight of box B :

$18 \times 25 = 450$ g (1)

Calculating total weight of all strawberries :

$360 + 450 = 810$ g (1)

Mean weight of 40 strawberries :

$\frac{810 \text{ g}}{40} = 20.25$ g (1)

20.25 ..... grams

(Total for Question 4 is 3 marks)

5 Sandeep sat 11 tests in January 2020
Each test was marked out of 60

Here are his test results.

45 41 35 44 38 47 47 39 37 43 42

(a) Find the interquartile range of these test results.
Show your working clearly.

arrange the data from smallest to largest

35 37 (38) 39 41 (42) 43 44 (45) 47 47 (1)

Q1 = 38 (lower quartile) Q3 = 45 (upper quartile) median = 42

Median = $\frac{11+1}{2}$ = 6th term

median of lower quartile, Q_1 = 38

median of upper quartile, Q_3 = 45 (1)

Interquartile range = $Q_3 - Q_1$

= 45 - 38

= 7

7 (1)

(3)

Sandeep also sat some tests in May 2020
Each test was marked out of 60

The median of the May 2020 test results is 42
The interquartile range of the May 2020 test results is 12

(b) In which month, January or May, were Sandeep's test results more consistent?
Give a reason for your answer.

January. As the interquartile range is lower. (1)

(1)

(Total for Question 5 is 4 marks)

6 Here is a list of six numbers written in order of size.

4 7 x 10 y y

8

The numbers have

a median of 9
a mean of 11

Find the value of x and the value of y.

median = $\frac{10 + x}{2} = 9$ (1)

$10 + x = 18$ (-10)

$\therefore x = 8$

mean = $11 = \frac{4 + 7 + 8 + 10 + 2y}{6}$ (1)

$66 = 29 + 2y$ (×6)

$66 - 29 = 2y$ (-2y)

(1)

$2y = 37$ (÷2)

$\therefore y = 18.5$

$x =$ 8 (1)

$y =$ 18.5

(Total for Question 6 is 4 marks)

7 The table shows information about the lengths of time, in minutes, 120 customers spent in a supermarket.

Length of time (L minutes)	**Frequency**
$20 < L \leqslant 30$	6
$30 < L \leqslant 40$	26
$40 < L \leqslant 50$	31
$50 < L \leqslant 60$	40
$60 < L \leqslant 70$	17

(a) Write down the modal class.

↳ class with highest frequency

$50 < L \leqslant 60$ (1)

.....

(1)

(b) Work out an estimate for the mean length of time spent by the 120 customers in the supermarket.

$$\text{mean} = \frac{\text{sum of median} \times \text{frequency}}{\text{total frequency}}$$

$$\text{mean} = \frac{(25 \times 6) + (35 \times 26) + (45 \times 31) + (55 \times 40) + (65 \times 17)}{120} \quad (1)$$

$$= \frac{150 + 910 + 1395 + 2200 + 1105}{120} \quad (1)$$

$$= \frac{5760}{120} \quad (1) = 48 \quad (1)$$

48 minutes

.....

(4)

(Total for Question 7 is 5 marks)

8 5 children are playing on a trampoline.
The mean weight of the 5 children is 28 kg.

2 of the children get off the trampoline.
The mean weight of these 2 children is 26.5 kg.

Work out the mean weight of the 3 children who remain on the trampoline.

Total weight of 5 children = $5 \times 28 = 140$ kg (1)

Total weight of 2 children = $2 \times 26.5 = 53$ kg

Total weight of 3 children = $140 - 53 = 87$ kg

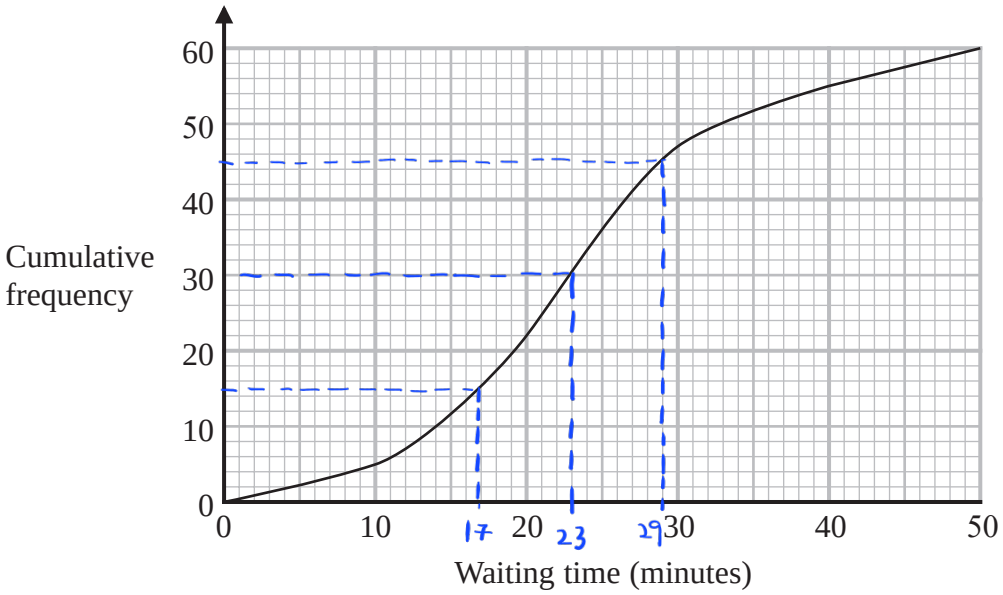
Mean weight of 3 children = $\frac{87}{3}$ (1)

$= 29$ kg (1)

29 kg

(Total for Question 8 is 3 marks)

9 The cumulative frequency graph gives information about the waiting times, in minutes, of people with appointments at Hospital A.



(a) Use the graph to find an estimate of the median waiting time at Hospital A.

half of cumulative frequency

23 (1) minutes

(1)

(b) Use the graph to find an estimate of the interquartile range of the waiting times at Hospital A.

Interquartile range = $Q_3 - Q_1$

IQR = 29 - 17 = 12 (1)

12 (1) minutes

(2)

At a different hospital, Hospital B, the median waiting time is 28 minutes and the interquartile range of the waiting times is 19 minutes.

(c) Compare the waiting times at Hospital A with the waiting times at Hospital B.

Hospital A has a lower waiting time than Hospital B because its (1) median is lower than Hospital B. The waiting time for Hospital A is less spread than Hospital B because the interquartile range is lower. (1)

(2)

(Total for Question 9 is 5 marks)

10 Max kept a record of the marks he scored in each of the 11 spelling tests he took one term.

Here are his marks.

18 5 7 12 11 18 15 16 17 13 14

Find the interquartile range of the marks.

Arrange the scores in order :

lower quartile upper quartile

5 , 7 , (11) , 12 , 13 , (14) , 15 , 16 , (17) , 18 , 18 (1)

Q_1 median Q_3

Interquartile range : $Q_3 - Q_1$

$= 17 - 11$ (1)

$= 6$ (1)

6

(Total for Question 10 is 3 marks)

11 The table shows information about the weights, in kilograms, of 40 babies.

Weight (w kg)	Frequency
$2 < w \leqslant 3$	12
$3 < w \leqslant 4$	16
$4 < w \leqslant 5$	9
$5 < w \leqslant 6$	2
$6 < w \leqslant 7$	1

(a) Write down the modal class.

modal class : class with highest frequency

$3 < w \leq 4$ (1)

.....

(1)

(b) Work out an estimate for the mean weight of the 40 babies.

Estimated Total weight $= (12 \times 2.5) + (16 \times 3.5) + (9 \times 4.5) + (2 \times 5.5) + (1 \times 6.5)$ (1)

$= 30 + 56 + 40.5 + 11 + 6.5$ (1)

$= 144$

Mean $= \frac{144}{40}$ (1) $= 3.6$ kg (1)

3.6 ..... kg

(4)

One of the 40 babies is going to be chosen at random.

(c) Find the probability that this baby has a weight of more than 5 kg.

Baby weight more than 5 kg $= \frac{2}{40} + \frac{1}{40}$ (1)

$= \frac{3}{40}$ (1)

$\frac{3}{40}$

.....

(2)

(Total for Question 11 is 7 marks)

12 Here is the number of goals that Henri's team scored one summer in each water polo match.

Find the interquartile range of the numbers of goals.
Show your working clearly.

Q_1 = median of lower quartile

Q_3 = median of upper quartile

Interquartile range : $Q_3 - Q_1$

: 16 - 9 (1)

= 7 (1)

7

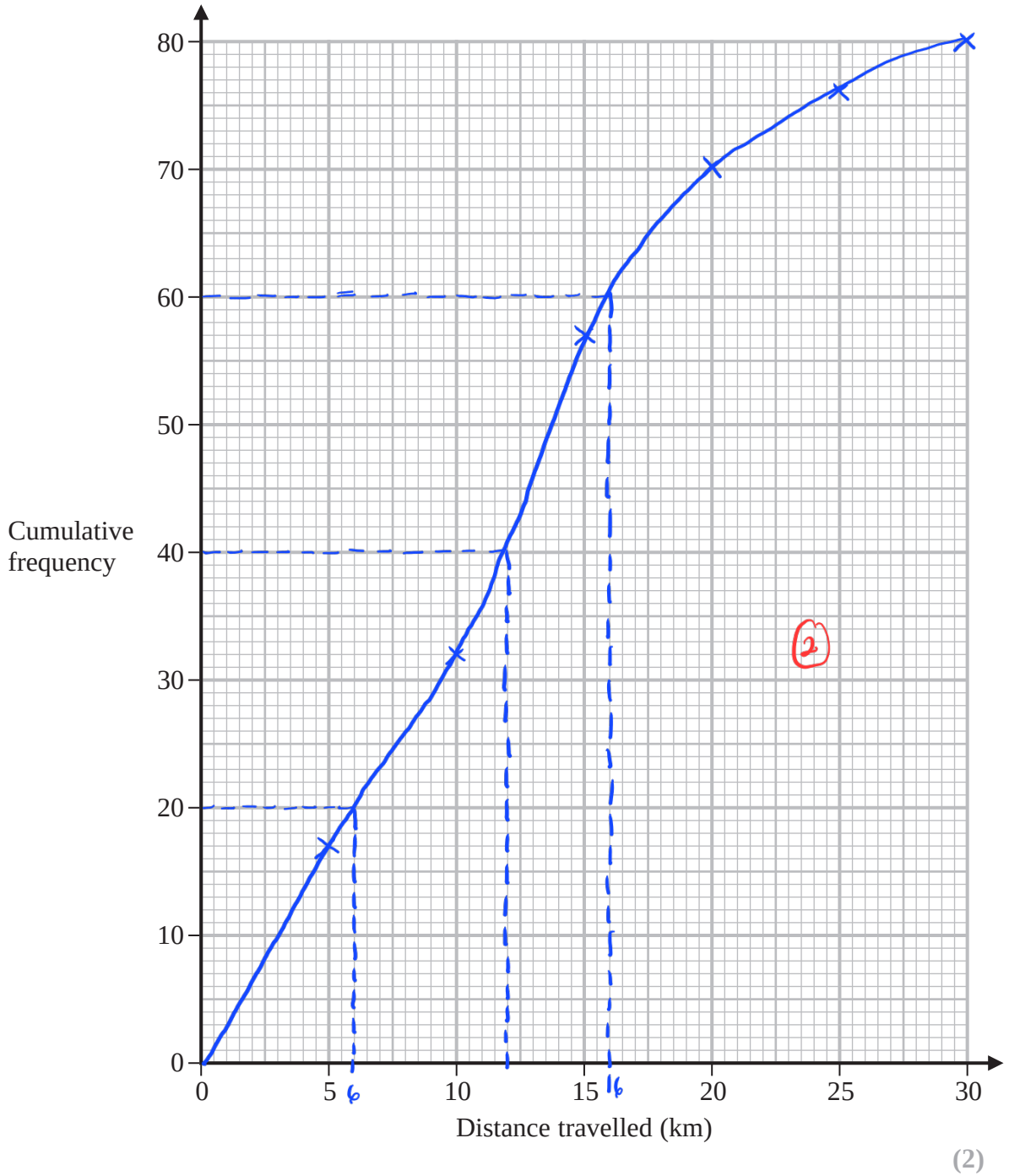
.....

(Total for Question 12 is 2 marks)

13 The cumulative frequency table gives information about the distance, in kilometres, that each of 80 workers travel from home to work at Office *A*.

Distance travelled (d km)	Cumulative frequency
$0 < d \leqslant 5$	17
$0 < d \leqslant 10$	32
$0 < d \leqslant 15$	57
$0 < d \leqslant 20$	70
$0 < d \leqslant 25$	76
$0 < d \leqslant 30$	80

(a) On the grid below, draw a cumulative frequency graph for the information in the table.



(2)

(b) Use your graph to find an estimate for the median distance travelled.

Median = $\frac{80}{2}$ = 40 - from graph

12 (1) km

(1)

(c) Use your graph to find an estimate for the interquartile range of the distances travelled.

$Q_1 = \frac{1}{4} \times 80 = 20$ $Q_3 = \frac{3}{4} \times 80 = 60$

Interquartile range = 16 - 6 (1)

= 10 (1)

10 km

(2)

For Office *B*, the median distance workers travel from home to work is 15 km and the interquartile range is 5 km.

(d) Use the information above to compare the distances that workers at Office *A* and workers at Office *B* travel from home to work.
Write down **two** comparisons.

1 workers in Office B travels further than workers in Office A since the median is higher. (1)

2 The distance travelled by workers in Office A is more spread out as the interquartile range is bigger. (1)

(2)

(Total for Question 13 is 7 marks)

14 Given that $a < b < c$

the four whole numbers a, a, b and c have

a mode of 7
a median of 8.5
a mean of 9

Work out the value of a, the value of b and the value of c.

mode = a = 7 (1)

median = $\frac{a+b}{2} = 8.5$

$\frac{7+b}{2} = 8.5$

$7+b = 17$

$b = 10$ (1)

mean = $\frac{a+a+b+c}{4} = 9$ (1)

$7+7+10+c = 36$

$c = 36 - 24 = 12$ (1)

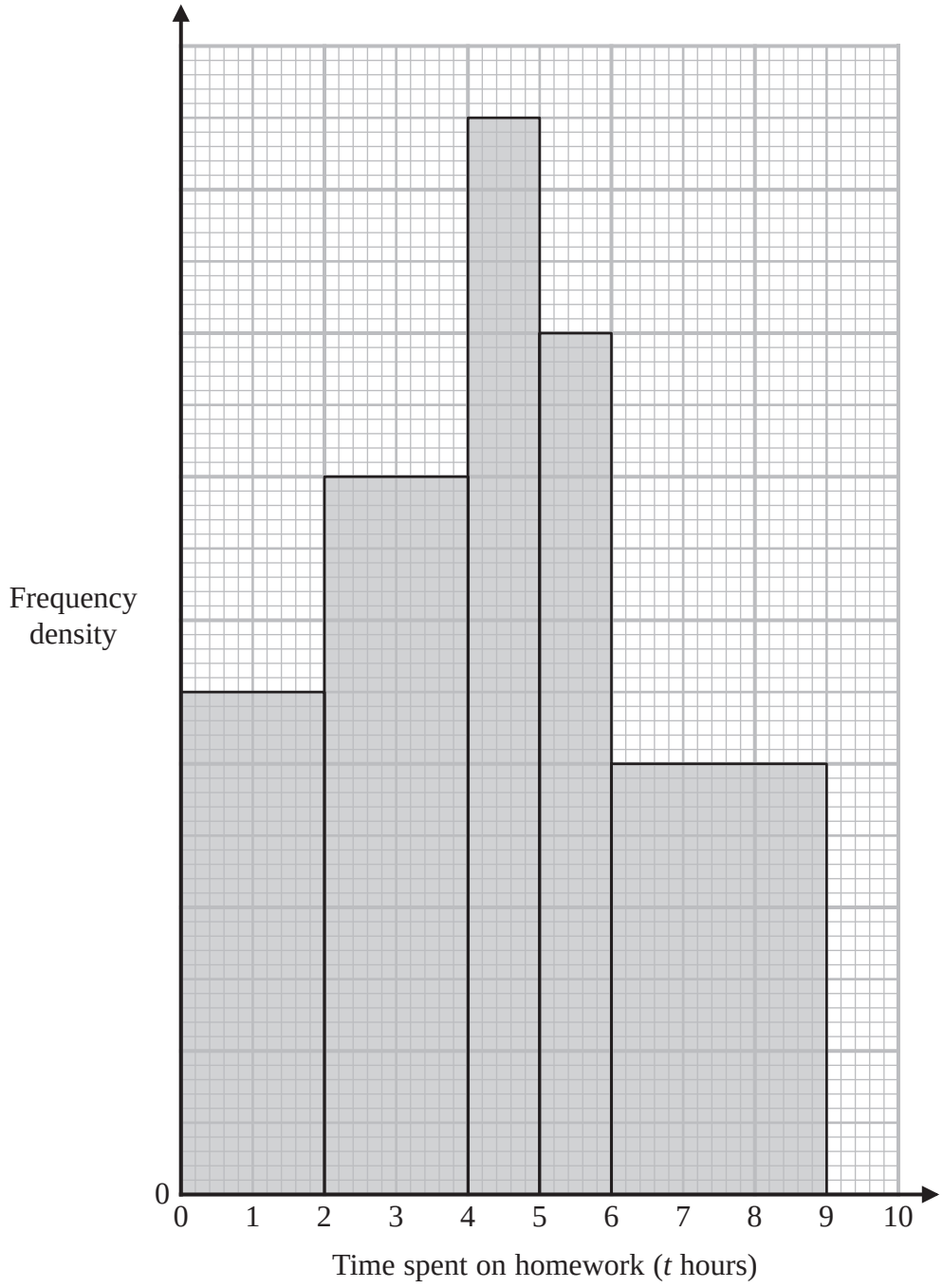
$a =$ 7

$b =$ 10

$c =$ 12

(Total for Question 14 is 4 marks)

15 The histogram and the table give some information about the amounts of time, in hours, that Year 11 students at Bergdesh Academy spent, in total, on their homework last week. No student in Year 11 spent longer than 9 hours on their homework.



frequency = frequency density x class width

Finding height of first bar :

f.d = $\frac{28}{2}$ = 14

(5 small square represents 2) (1)

Time spent on homework (t hours)	Frequency
$0 < t \leqslant 2$	28
$2 < t \leqslant 4$	40
$4 < t \leqslant 5$	30
$5 < t \leqslant 6$	24 (1)
$6 < t \leqslant 9$	36

$20 \times 2 = 40$

$30 \times 1 = 30$

$24 \times 1 = 24$

$12 \times 3 = 36$

Using the information in the histogram and in the table, work out an estimate for the mean amount of time the Year 11 students spent on their homework last week.
Give your answer in hours correct to 3 significant figures.

$$\text{estimated mean} = \frac{(1 \times 28) + (3 \times 40) + (4.5 \times 30) + (5.5 \times 24) + (7.5 \times 36)}{28 + 40 + 30 + 24 + 36} \quad (1)$$

$$= \frac{28 + 120 + 135 + 132 + 270}{158}$$

$$= \frac{685}{158} \quad (1)$$

$$= 4.34 \quad (1)$$

4.34 ..... hours

(Total for Question 15 is 5 marks)

16 A mathematics teacher at a school asked a group of students how far, in kilometres, each student had travelled to get to school that day.

The table gives information about their answers.

Distance travelled (d km)	Number of students
$0 < d \leqslant 2$	x
$2 < d \leqslant 4$	11
$4 < d \leqslant 6$	8
$6 < d \leqslant 8$	6
$8 < d \leqslant 10$	5

The teacher calculated that an estimate for the mean distance travelled by the whole group of students was 4.25 km.

Work out the value of x.
Show your working clearly.

Estimated mean $= \dfrac{(x \times 1) + (11 \times 3) + (8 \times 5) + (6 \times 7) + (5 \times 9)}{x + 11 + 8 + 6 + 5} = 4.25$ (1)

$= \dfrac{x + 33 + 40 + 42 + 45}{x + 30} = 4.25$

$160 + x = 4.25(30 + x)$ (1)

$160 + x = 127.5 + 4.25x$

$160 - 127.5 = 4.25x - x$

$32.5 = 3.25x$ (1)

$x = \dfrac{32.5}{3.25}$

$= 10$ (1)

$x =$ 10

(Total for Question 16 is 4 marks)

17 The table gives information about the speeds, in kilometres per hour, of 80 motorbikes as each pass under a bridge.

Speed (*s* kilometres per hour)	**Frequency**
$40 < s \leqslant 50$	10
$50 < s \leqslant 60$	16
$60 < s \leqslant 70$	19
$70 < s \leqslant 80$	23
$80 < s \leqslant 90$	12

(a) Write down the modal class.

$70 < s \leqslant 80$ (1)

$70 < s \leqslant 80$

(1)

(b) Work out an estimate for the mean speed of the motorbikes as they pass under the bridge. Give your answer correct to 3 significant figures.

$$= \frac{10(45) + 16(55) + 19(65) + 23(75) + 12(85)}{10 + 16 + 19 + 23 + 12} \quad (2)$$

$$= \frac{5310}{80} \quad (1)$$

$$= 66.375$$

$$= 66.4 \text{ (3sf)} \quad (1)$$

66.4 kilometres per hour

(4)

(Total for Question 17 is 5 marks)

18 Ava writes down five whole numbers.

For these five numbers

the median is 7 – 7 should be in the middle

the mode is 8 – 8 should appear twice

the range is 5 – smallest number can be obtained by 8 - 5

Find a possible value for each of the five numbers that Ava writes down.

8 - 5 = 3

3, 5, 7, 8, 8 (3)

3, 5, 7, 8, 8

.....

(Total for Question 18 is 3 marks)

19 There are 5 cocoa pods in a bag.
The mean weight of the 5 cocoa pods is 398 grams.

A sixth cocoa pod is put into the bag.
The mean weight of the 6 cocoa pods is 401 grams.

Work out the weight of the sixth cocoa pod that is put into the bag.

weight of 5 cocoa pods = $398 \times 5 = 1990$ (1)

weight of 6 cocoa pods = $401 \times 6 = 2406$

weight of sixth cocoa pod = $2406 - 1990$ (1)

$= 416$ (1)

416 ..... grams

(Total for Question 19 is 3 marks)

20 15 people were asked how long, in minutes, they had been waiting for a bus.

Here are the results.

2	3	3	4	5	6	6	8	9	10	11	13	14	15	18

Q_1 median Q_3

Find the interquartile range of these times.

Interquartile range = $Q_3 - Q_1$

= 13 − 4 (1)

= 9 (1)

9

..... minutes

(Total for Question 20 is 2 marks)

21 Here are five cards.

Each card has a number written on it.

15	7	–2	23	x

The mean of the five numbers is 12

Work out the value of x

$$\text{mean} = \frac{15 + 7 + (-2) + (23) + x}{5} = 12 \quad (1)$$

$$43 + x = 12(5) \quad (1)$$

$$x = 60 - 43$$

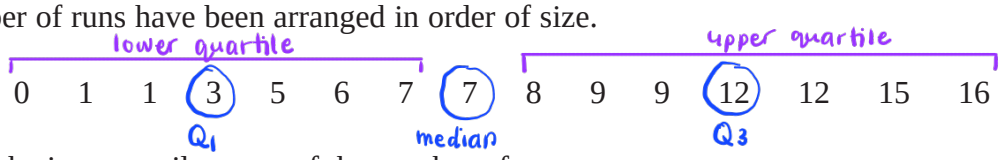
$$= 17 \quad (1)$$

$x =$ 17

(Total for Question 21 is 3 marks)

22 Here is the number of runs scored by a baseball team in each of its 15 games this season.

The number of runs have been arranged in order of size.



Work out the interquartile range of the number of runs.

Interquartile range = $Q_3 - Q_1$

= 12 - 3 (1)

= 9 (1)

Q_1 = median of lower quartile

Q_3 = median of upper quartile

9

(Total for Question 22 is 2 marks)

23 Alberto, Bill, Candela and Diana are four friends.

Here is some information about the height of each of these friends.

Alberto's height is 158 cm.
Bill's height is 175 cm.
Candela's height is greater than Diana's height.

The median height of these four friends is 160 cm.
The range of the heights of these four friends is 21 cm.

Work out Candela's height and Diana's height.

154 158 162 175
(y) (A) (x) (B)

Since median = 160 cm,

$\frac{158 + x}{2} = 160$

$x = 162$ cm (1)

Since Candela's height is higher than Diana's,

x = Candela's height = 162 cm

Since range = 21 cm,

$175 - 21 = y = 154$ cm = Diana's height

(1)

Candela 162 (1) cm

Diana 154 cm

(Total for Question 23 is 3 marks)

24 Here are some integers where $a < b < c < d$

$$a \quad b \quad c \quad d \quad d \quad d$$

The mode of the integers is 9
The median of the integers is 8
The range of the integers is 4

Work out the value of a, the value of b, the value of c and the value of d

mode : $d = 9$ (1)

median : $8 = \frac{c+9}{2}$

$c = 7$ (1)

range : $4 = 9 - a$

$a = 5$

$b = 6$

(0)

$a =$ 5

$b =$ 6

$c =$ 7

$d =$ 9

(Total for Question 24 is 3 marks)

25 Yusuf sat 8 examinations.

Here are his marks for 5 of the examinations.

64 68 72 75 77 80 80

For his results in all 8 examinations

the mode of his marks is 80
the median of his marks is 74
the range of his marks is 16

Find Yusuf's marks for each of the other 3 examinations.

a = 80 (1)

b = range, 16 = 80 − b

b = 64 (1)

median, 74 = $\frac{75 + c}{2}$

c = 73 (1)

64
.....
(1) 73
.....
80
.....

(Total for Question 25 is 4 marks)

26 Shane invests 7200 dollars for 3 years in a savings account.
He gets 2.5% per year compound interest.

How much money will Shane have in his savings account at the end of 3 years?
Give your answer to the nearest dollar.

$7200 \times (1.025)^3 = 7754$

(2) (1)

7754 ..... dollars

(Total for Question 26 is 3 marks)

27 Jenny has six cards.

Each card has a whole number written on it so that

the smallest number is 5
the largest number is 24
the median of the six numbers is 14
the mode of the six numbers is 8

Jenny arranges her cards so that the numbers are in order of size.

(a) For the remaining four cards, write on each dotted line a number that could be on the card.

3

median, $14 = \frac{8 + m}{2}$

$m = 20$

(3)

A basketball team plays 6 games.
After playing 5 games, the team has a mean score of 21 points per game.
After playing 6 games, the team has a mean score of 23 points per game.

(b) Work out the number of points the team scored in its 6th game.

$5 \times 21 = 105$

$6 \times 23 = 138$ (1)

$138 - 105 = 33$ (1)

(1)

33

(3)

(Total for Question 27 is 6 marks)

28 The frequency table gives information about the number of points scored by a player.

Number of points	Frequency
0	13
1	17
2	8
3	x
4	11

The mean number of points scored is 2

Work out the value of x

$$\text{mean}, 2 = \frac{13(0) + 17(1) + 8(2) + 3x + 11(4)}{13 + 17 + 8 + x + 11} \quad (1)$$

$$2(13) + 2(17) + 2(8) + 2x + 2(11) = 17 + 16 + 3x + 44 \quad (1)$$

$$26 + 34 + 16 + 2x + 22 = 77 + 3x \quad (1)$$

$$98 - 77 = 3x - 2x$$

$$x = 21 \quad (1)$$

$x =$ 21

(Total for Question 28 is 4 marks)

29 Diyar recorded the distance, in kilometres, that he cycled each day for 11 days.
Here are his results.

8 10 12 13 5 23 21 7 5 16 14

Find the interquartile range of his results.

5 5 7 8 10 12 13 14 16 21 23 (1)

Q1 = 7

Q3 = 16 (1)

IQR = 16 - 7

= 9 (1)

9 ..... km

(Total for Question 29 is 3 marks)

30 The table shows information about the frame size, in cm, of 60 bicycles sold in a shop.

Frame size (S cm)	Frequency
$30 < S \leqslant 36$	4
$36 < S \leqslant 42$	14
$42 < S \leqslant 48$	18
$48 < S \leqslant 54$	19
$54 < S \leqslant 60$	5

(a) Write down the modal class.

$48 < S \leq 54$ (1)

.....

(1)

(b) Work out an estimate for the mean frame size.

$$\frac{33 \times 4 + 39 \times 14 + 45 \times 18 + 51 \times 19 + 57 \times 5}{60} \quad (1)$$

$$= \frac{132 + 546 + 810 + 969 + 285}{60} \quad (1)$$

$$= \frac{2742}{60} \quad (1)$$

$$= 45.7 \quad (1)$$

45.7 ..... cm

(4)

(Total for Question 30 is 5 marks)

31 Here is a list of six numbers written in order of size.

3		6	10		
x	5	y	z	10	12

The numbers have

a range of 9
a median of 8
a mode of 10

Find the value of x, the value of y and the value of z

mode = 10, hence $z = 10$

median 8, $\frac{y + 10}{2} = 8$

$y = 6$

range = 9, $12 - 9 = 3$

$x = 3$

$x =$ 3 (3)

$y =$ 6

$z =$ 10

(Total for Question 31 is 3 marks)

32 60 students sat a Mathematics exam.

The mean mark for the 32 students in Class A was 55
The mean mark for the 28 students in Class B was 52

Find the mean mark for all 60 students.

$55 \times 32 = 1760$ (1)

$52 \times 28 = 1456$

$$\frac{1760 + 1456}{60} = \frac{3216}{60}$$ (1)

$= 53.6$ (1)

53.6

(Total for Question 32 is 3 marks)

33 Here are the numbers of aces that Rutger served in each of 11 tennis matches.

1 1 2 4 6 8 8 9 11 12 15

Q1 median Q3

(a) Find the interquartile range of the numbers of aces.
Show your working clearly.

IQR = 11 - 2 = 9
(1) (1)

9

(2)

Kim also plays in 11 tennis matches.

For Kim
the median number of aces is 11
the interquartile range of the numbers of aces is 5

(b) State, giving a reason, whether Rutger or Kim

(i) served more aces on average,

Kim as she has higher median (1)

(1)

(ii) was more consistent with the number of aces served.

Kim as she has smaller IQR. (1)

(1)

(Total for Question 33 is 4 marks)

34 80 students entered a dancing competition.

The table gives information about the length of time, in minutes, for which each student spent dancing.

Time (m)	Frequency
$0 < m \leqslant 12$	11
$12 < m \leqslant 24$	25
$24 < m \leqslant 36$	23
$36 < m \leqslant 48$	15
$48 < m \leqslant 60$	6

Work out an estimate for the mean length of time the students spent dancing.

Mean $= \dfrac{(6\times 11)+(18\times 25)+(30\times 23)+(42\times 15)+(54\times 6)}{80}$ (1)

$= \dfrac{66+450+690+630+324}{80}$ (1)

$= \dfrac{2160}{80}$ (1)

$= 27$ (1)

27 minutes

(Total for Question 34 is 4 marks)

35 Here is a list giving the numbers of runs scored last week by the eleven members of cricket team **A**.

		Q_1			median			Q_3		
2	3	4	6	21	26	27	32	34	61	72

The interquartile range of the numbers of runs scored last week by the eleven members of cricket team **B** was 42

Using a suitable calculation, write down one comparison between the numbers of runs scored by the members of cricket team **A** and the members of cricket team **B**.
Show your working clearly.

$IQR_A = 34 - 4$ (1)

$= 30$ (1)

IQR for Team B is higher than Team A. The runs scored were more spread out for Team B than Team A. (1)

(Total for Question 35 is 3 marks)

36 Gemara works as a taxi driver.
Last week, he recorded the following information about the distances he drove.

For the 5 days from Monday to Friday, the mean number of kilometres he drove was 104
For the 7 days from Monday to Sunday, the mean number of kilometres he drove was 127

On Saturday, Gemara drove 132 kilometres.

Work out the number of kilometres he drove on Sunday.

Total distance :

Monday to Friday : $5 \times 104 = 520$ km (1)

Monday to Sunday : $7 \times 127 = 889$ km

Saturday and Sunday : $889 - 520 = 369$ km (1)

Sunday : $369 - 132 = 237$ km (1)

237 kilometres

(Total for Question 36 is 3 marks)

37 Akari played a computer game eleven times.
Here are her scores.

25 20 28 27 26 22 23 29 20 29 26

(a) Find the interquartile range of her scores.

20 20 (22) 23 25 (26) 26 27 (28) 29 29 (1)

Q1 median Q3

IQR = 28 - 22 (1)

= 6 (1)

6

.....

(3)

Machi played the same computer game eleven times.

The interquartile range for Machi's scores was 9

(b) Who had the more consistent scores, Akari or Machi?
Give a reason for your answer.

Akari has more consistent scores since IQR is lower.

.....

(1)

.....

(Total for Question 37 is 4 marks)

38 Here are the test marks of 15 students.

7 10 14 15 16 17 18 19 20 20 23 25 30 39 40

LQ median UQ

Find the interquartile range of these marks.

IQR = 25 − 15 (1)

= 10 (1)

10

(Total for Question 38 is 2 marks)

39 Team **A** and Team **B** take part in a quiz league.

After 11 rounds, Team **A** has a mean score per round of 17
After 9 rounds, Team **B** has a mean score per round of 18

Both teams take part in a further round.
After this round, both teams have a mean score per round of 18.5

In the further round, Team **A** scored more points than Team **B**.

How many more?

Total score (Team A) : $17 \times 11 = 187$

Total score (Team B) : $18 \times 9 = 162$ (1)

Team A : $\frac{187 + x}{12} = 18.5$

$187 + x = 18.5 \times 12$

$x = 222 - 187 = 35$ (1)

Team B : $\frac{162 + y}{10} = 18.5$

$162 + y = 185$

$y = 185 - 162 = 23$

$35 - 23 = 12$ (1)

(1)

12

(Total for Question 39 is 4 marks)