

Representing and Interpreting Data

ANSWERS

Calculator | 30 minutes | Total marks: 30

Name Class

1 A pie chart shows how the students in a school travel to school.

(a) 70 students walk to school.

The angle for Walk is 126°

Work out the total number of students in the school.

$$70 \div 126 \times 360 \text{ (1)}$$

Answer 200 (1) [2 marks]

(b) 45 students travel by bus.

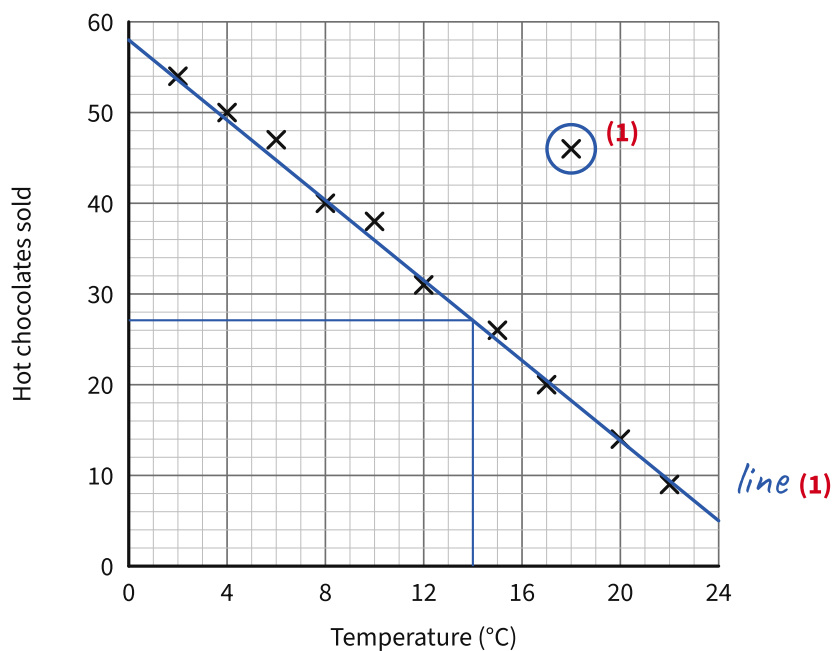
Work out the angle for Bus.

$$\frac{45}{200} \times 360 \text{ (1)}$$

Answer 81 (1) ° [2 marks]

2

The scatter graph shows the temperature and the number of hot chocolates sold at a café on 11 days.



(a) Describe the correlation.

Answer negative (1)

[1 mark]

(b) One point does not fit the pattern.

Circle this point on the graph.

[1 mark]

(c) Draw a line of best fit on the graph.

[1 mark]

(d) Use your line to estimate the number of hot chocolates sold when the temperature is 14 °C

Answer 27 (1) accept 24 to 30

[1 mark]

(e) Explain why the line should not be used to estimate the number sold at 30 °C

30 °C is outside the range of the data (1)

[1 mark]

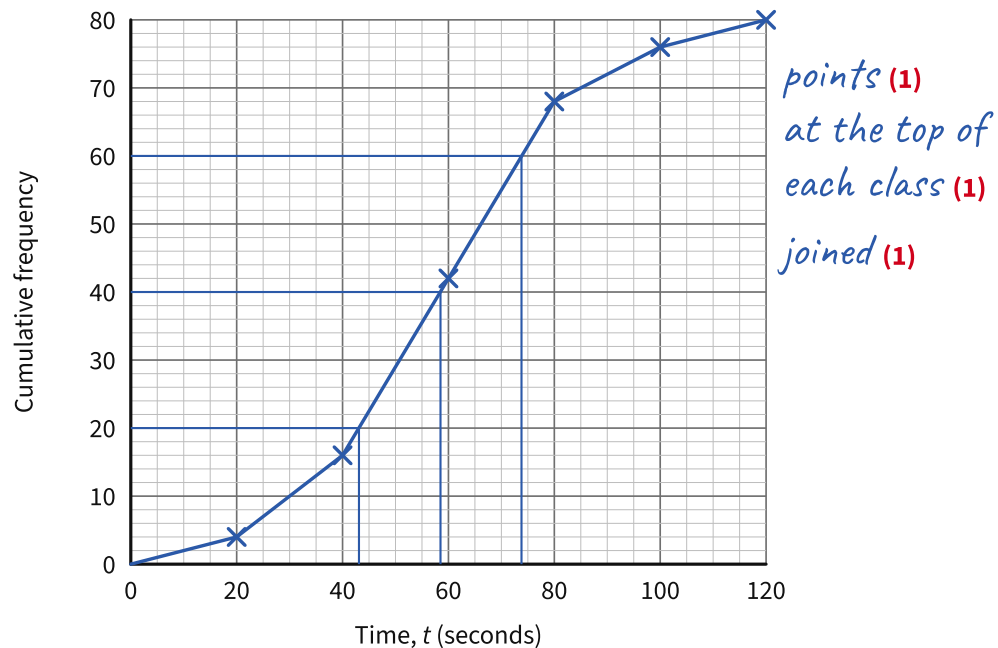
3

80 people solve a puzzle.

The table shows information about the times they take.

Time, t (seconds)	$t \leq 20$	$t \leq 40$	$t \leq 60$	$t \leq 80$	$t \leq 100$	$t \leq 120$
Cumulative frequency	4	16	42	68	76	80

(a) Draw a cumulative frequency graph for this information.



[3 marks]

(b) Use your graph to estimate the median.

Answer 58 (1) accept 56 to 61 seconds [1 mark]

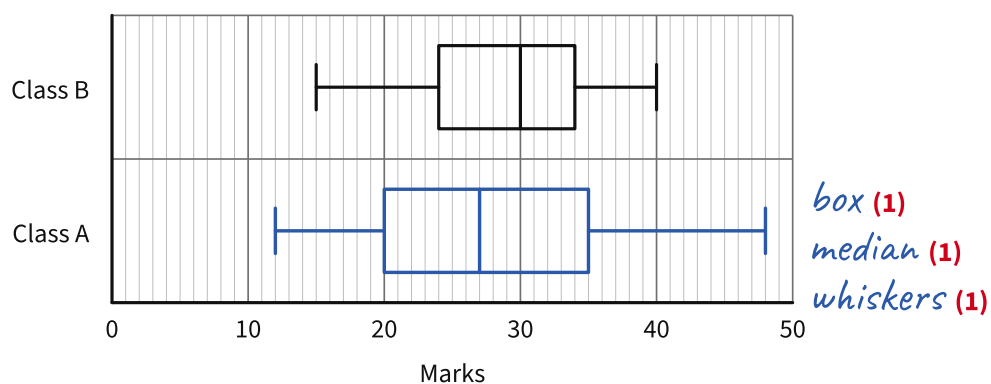
(c) Use your graph to estimate the interquartile range.

74 - 43 (1)

Answer 31 (1) accept 27 to 35 seconds [2 marks]

4

The box plot shows the marks of Class B in a test.



Here is some information about the marks of Class A in the same test.

Lowest	Lower quartile	Median	Upper quartile	Highest
12	20	27	35	48

(a) Draw the box plot for Class A on the diagram.

[3 marks]

(b) Compare the marks of Class A and Class B.

*Class B has the higher median, 30 against 27,
so Class B did better on average (1)*

*Class B has the smaller interquartile range, 10 against 15,
so its marks are more consistent (1)*

[2 marks]

5

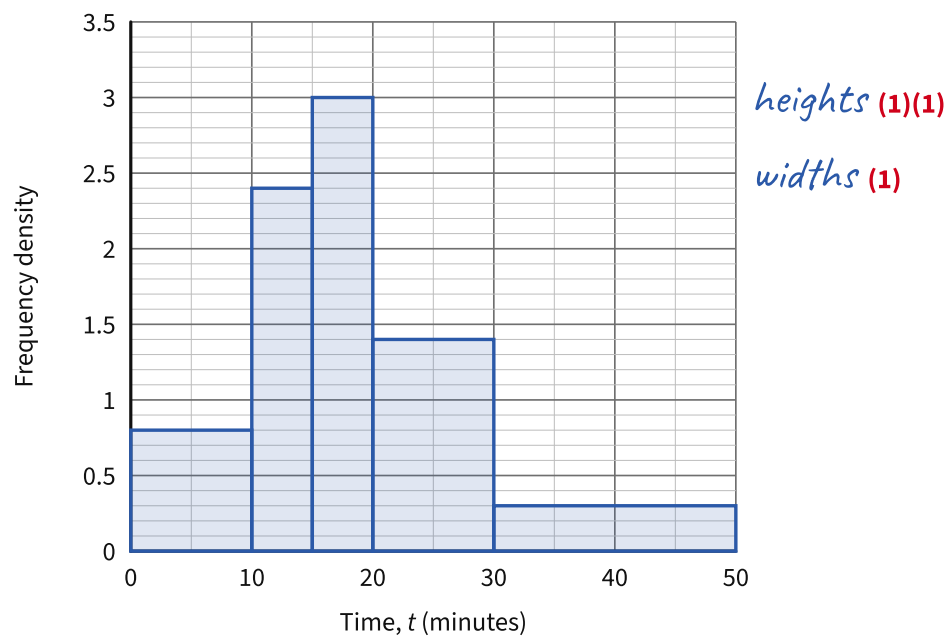
The table shows the times that 55 people spend in a shop.

Time, t (minutes)	Frequency	Frequency density
$0 < t \leq 10$	8	0.8
$10 < t \leq 15$	12	2.4
$15 < t \leq 20$	15	3
$20 < t \leq 30$	14	1.4
$30 < t \leq 50$	6	0.3 (1)(1)

(a) Complete the table.

[2 marks]

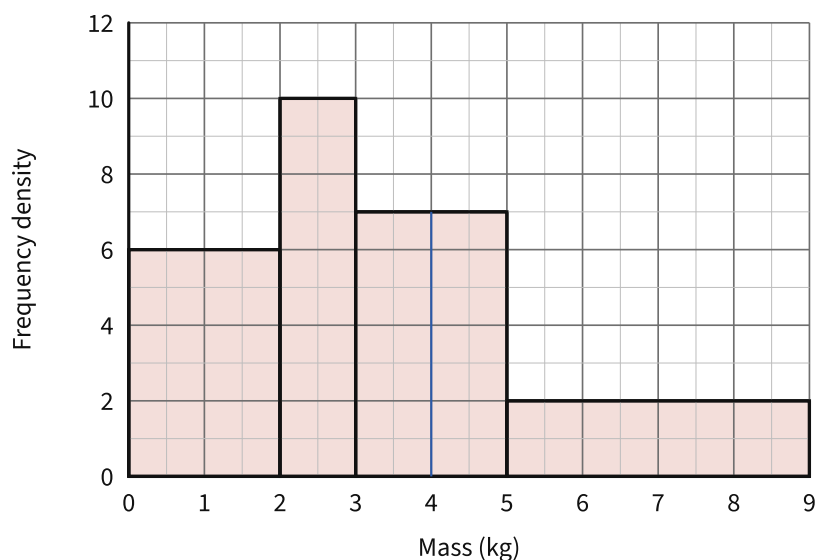
(b) Draw a histogram for this information.



[3 marks]

6

The histogram shows the masses of the parcels in a van.



(a) Work out the total number of parcels.

$$6 \times 2 = 12 \quad 10 \times 1 = 10 \quad (1)$$

$$7 \times 2 = 14 \quad 2 \times 4 = 8 \quad (1)$$

Answer 44 (1)

[3 marks]

(b) Estimate the number of parcels with a mass of more than 4 kg.

$$7 \times 1 + 8 \quad (1)$$

Answer 15 (1)

[2 marks]

Question	Topic	RAG
1	I can work with angles and frequencies in a pie chart	
2	I can interpret a scatter graph and use a line of best fit	
3	I can draw a cumulative frequency graph and estimate the median and interquartile range	
4	I can draw a box plot and compare two distributions	
5	I can draw a histogram with unequal class widths	
6	I can interpret a histogram	