

GCSE in Mathematics B
Modular 2544
Unit 2 Handling Data
Practice Paper E
Higher
(Calculator and Non–Calculator)

1. The manager at “Fixit Exhausts” records the time, to the nearest minute later to repair the exhaust on a car.

Here are his results.

32, 29, 34, 28, 22, 41, 57, 43, 28, 33,
35, 25, 52, 47, 39, 27, 36, 48, 53, 44,

Complete the stem and leaf diagram and the key to show this information.

2	
3	
4	
5	

Key:

(Total 4 marks)

2. The table gives information about the time taken by 20 students to travel to school.

Times (t minutes)	Frequency		
$0 < t \leq 5$	2		
$5 < t \leq 10$	8		
$10 < t \leq 15$	4		
$15 < t \leq 20$	3		
$20 < t \leq 25$	3		

- (a) Write down the modal class interval.

..... (1)

- (b) Work out an estimate for the mean time.

..... minutes
(4)
(Total 5 marks)

3. Each day, Anthony travels to work.
He can be on time or early or late.

The probability that he will be on time is 0.02

The probability that he will be early is 0.79

Work out the probability that Anthony will be late.

.....
(Total 2 marks)

5. The table shows some information about the members of a golf club.

Age range	Male	Female	Total
Under 18	29	10	39
18 to 30	82	21	103
31 to 50	147	45	192
Over 50	91	29	120
Total number of members			454

The club secretary carries out a survey of the members.

He chooses a sample, stratified both by age range and by gender, of 90 of the 454 members.

Work out an estimate of the number of male members, in the age range 31 to 50, he would have to sample.

.....
(Total 2 marks)

TOTAL FOR SECTION B: 15 MARKS

1. Mr Beeton is going to open a restaurant.
He wants to know what type of restaurant people like.
He designs a questionnaire.

- (a) Design a suitable question he could use to find out what type of restaurant people like.

(2)

He asks his family “Do you agree that pizza is better than pasta?”

This is **not** a good way to find out what people who might use his restaurant like to eat.

- (b) Write down **two** reasons why this is **not** a good way to find out what people who might use his restaurant like to eat.

First reason

.....
.....

Second reason

.....
.....

(2)

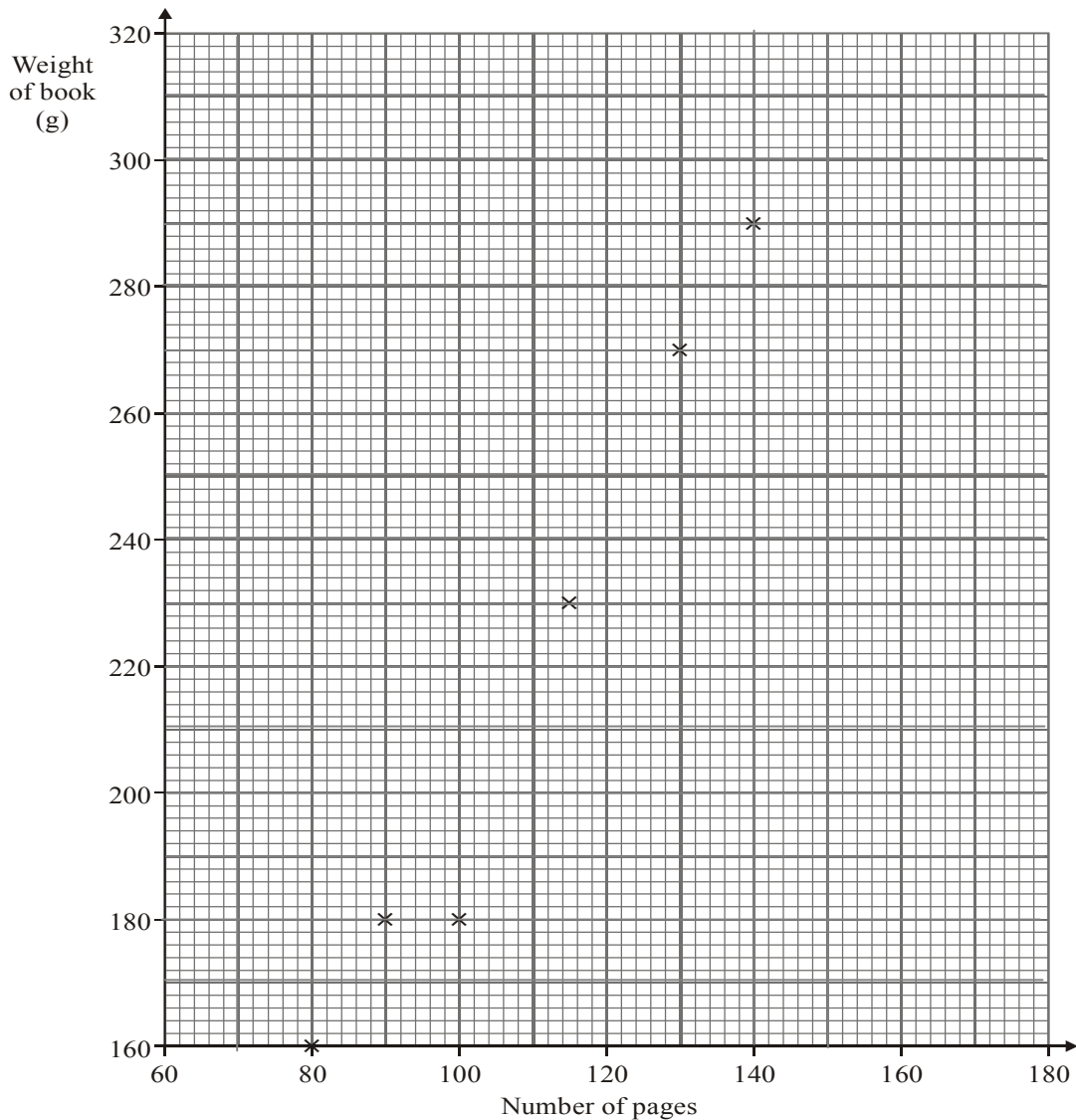
(Total 4 marks)

2. The table shows the number of pages and the weight, in grams, for each of 10 books.

Number of pages	80	130	100	140	115	90	160	140	105	150
Weight (g)	160	270	180	290	230	180	320	270	210	300

(a) Complete the scatter graph to show the information in the table.
The first 6 points in the table have been plotted for you.

(1)



(b) For these books, describe the correlation between the number of pages and the weight of a book.

.....

(1)

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

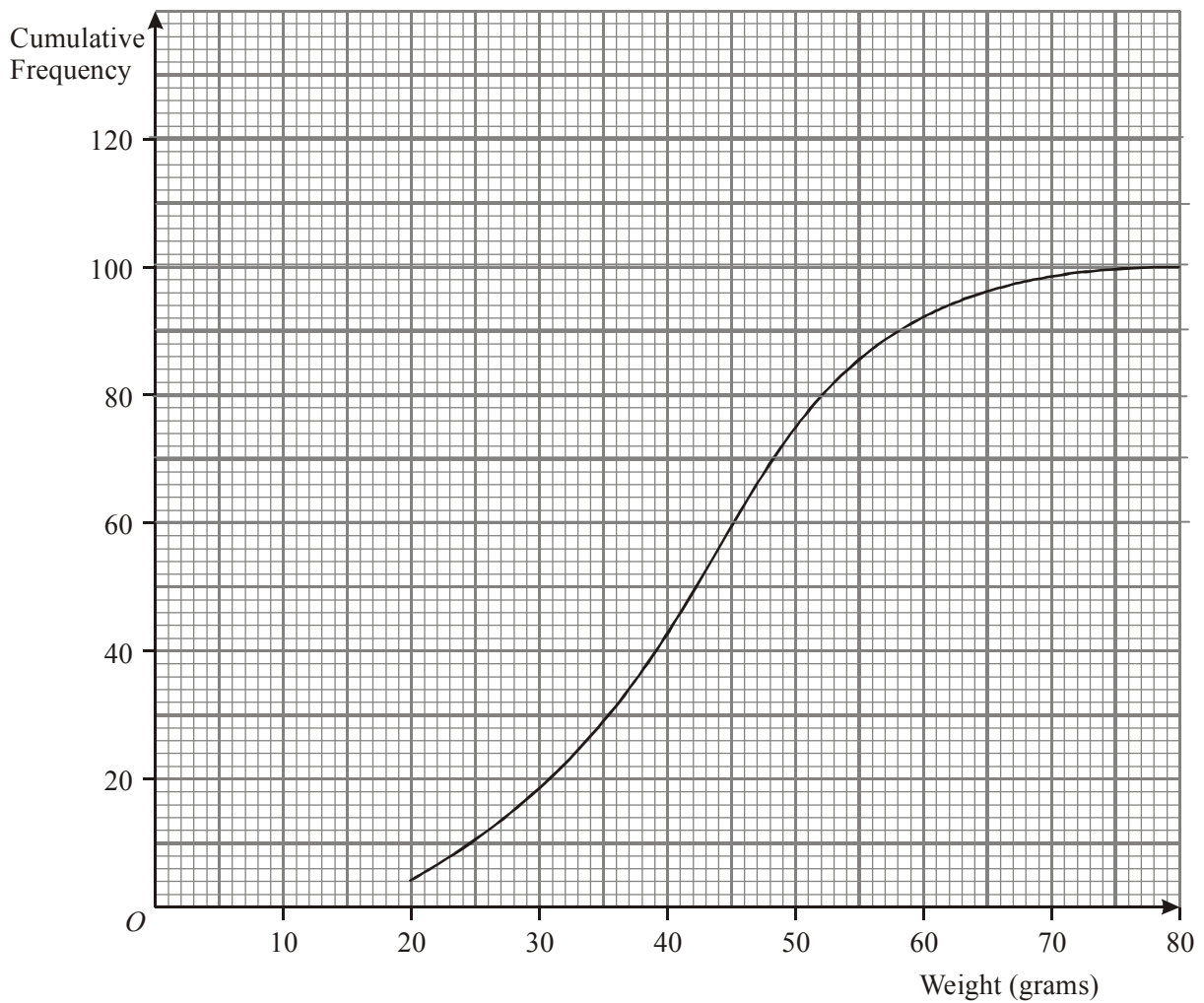
(Total 3 marks)

3. Daniel took a sample of 100 pebbles from Tawny Beach. He weighed each pebble and recorded its weight. He used the information to draw the cumulative frequency graph shown on the grid.

Use the cumulative frequency graph to find an estimate for

- (i) the median weight of these pebbles,
 grams
- (ii) the number of pebbles with a weight more than 60 grams.

(3)



(Total 3 marks)

4. A bag contains 8 black beads and 3 green beads.

Gianna takes a bead at random from the bag, records its colour and does **not** replace it. She does this one more time.

Work out the probability that the two beads Gianna takes are different colours.

.....
(Total 5 marks)

TOTAL FOR SECTION B: 15 MARKS

BLANK PAGE

Mark Scheme Paper E
Modular 2544 Unit 2 = Data Handling
Higher – Section A – Calculator

1.

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

Key: $2 \mid 2 = 22$

2. (a) $5 < t \leq 10$

Times (t minutes)	Frequency	Mid	Mid \times f
$0 < t \leq 5$	2	2.5	5
$5 < t \leq 10$	8	7.5	60
$10 < t \leq 15$	4	12.5	50
$15 < t \leq 20$	3	17.5	52.5
$20 < t \leq 25$	3	22.5	67.5
	20		235

(b) $235 \div 20 = 11.75$

3. $1 - 0.81 = 0.19$

4. 456, 463

5. $\frac{147}{454} \times 90 = 29.14$ Sample 29 males.

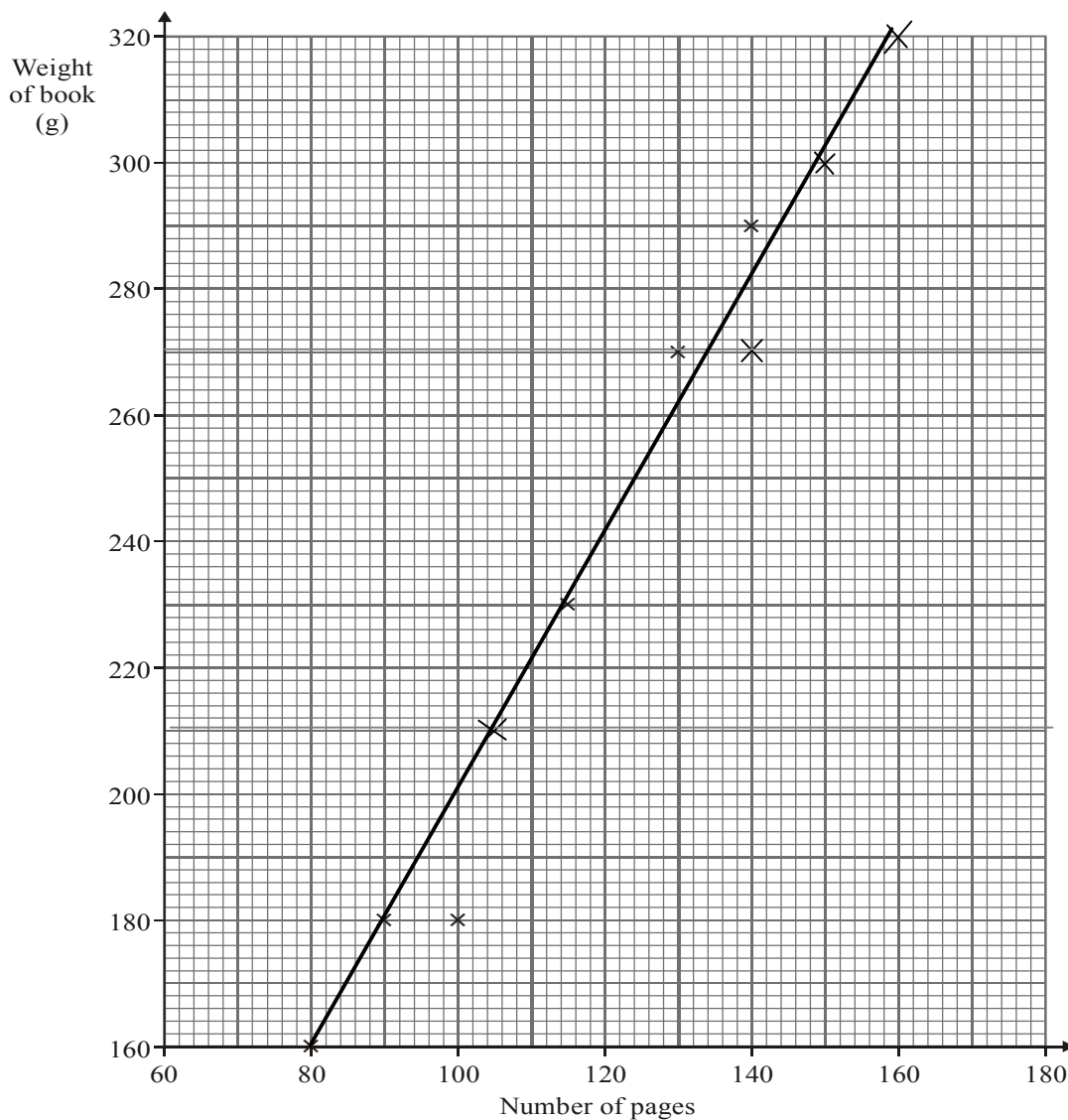
Mark Scheme Paper E
Modular 2544 Unit 2 = Data Handling
Higher – Section B – Non-Calculator

1. (a) What type of restaurant do you go to to eat?

- Chinese Indian Italian Fish & chips Other

(b) He has not asked about different types of food ... only pizza and pasta.
 Asking his family is a biased sample ... needs to ask lots of people and different types of people.

2.



(b) Positive

3. (i) 42 (ii) $100 - 92 = 8$

4. $\frac{8}{11} \times \frac{3}{10} + \frac{3}{11} \times \frac{8}{10} = \frac{48}{120}$ (or $\frac{2}{5}$)