

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										



General Certificate of Secondary Education
Higher Tier
June 2010

Mathematics (Modular) (Specification B)

43051/HB

Module 1 Section B

Monday 21 June 2010 2.05 pm to 2.35 pm

H

For this paper you must have:

- mathematical instruments

You must **not** use a calculator.



Time allowed for Section B

- 30 minutes

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the space provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.
- You may **not** use your calculator in Section B. Your calculator must remain on the floor under your seat.
- When you have answered Section B you may work again on Section A but you may **not** use your calculator. It must remain on the floor under your seat.
- At the end of the examination tag Section A and Section B together with Section A on top.

Information

- The marks for questions are shown in brackets.
- The maximum mark for Section B is 23.
- You may ask for more answer paper and graph paper. This must be tagged securely to this answer booklet.

Advice

- In all calculations, show clearly how you work out your answer.



J U N 1 0 4 3 0 5 1 H B 0 1

WMP/Jun10/43051/HB

43051/HB

Answer **all** questions in the spaces provided.

6 60 adults and 40 teenagers were asked to choose their favourite method of contacting friends.

- No teenagers chose letter.
- Half the adults chose telephone.
- The number of adults who chose text was one-quarter of the number of teenagers who chose text.

Use this information to complete the two-way table.

	Telephone	Text	e-mail	Letter
Adults				9
Teenagers	9		7	

.....

.....

.....

(4 marks)

7 Write a different single-digit number on each of the five cards so that

- the median is 6
- the range is 8
- the mean is 5.

.....

.....

.....

.....

○ ○ ○ ○ ○

(2 marks)



8 (a) Ewan has a five-sided spinner numbered 1, 2, 3, 4 and 5.
 The spinner is biased.
 Some of the probabilities of the spinner landing on each number are shown in the table.

Number	1	2	3	4	5
Probability	0.15	0.25	0.08		

The probability of the spinner landing on 4 is equal to the probability of landing on 1 or 2.

Work out the probability of the spinner landing on 5.

.....

.....

.....

.....

Answer (3 marks)

8 (b) Carly has a fair spinner with four equal sections numbered 1, 2, 3 and 4.
 Carly spins the spinner five times.
 Here are some possible sets of results she could get.

Set 1 2, 3, 2, 3, 2

Set 2 3, 1, 2, 4, 4

Set 3 1, 1, 1, 1, 1

Which, if any, of these sets of data is most likely?
 Circle your choice and explain your answer.

Set 1 Set 2 Set 3 All equally likely

.....

.....

.....

(2 marks)



9 Daniel collects data from the Internet on the number of elephants in Africa over the last 50 years.

9 (a) Is Daniel's data Primary data or Secondary data?
Give a reason for your answer.

Answer

Reason

.....
(2 marks)

9 (b) Write **either** a key question **or** a hypothesis he could investigate using the data he has collected.

.....
.....
.....
(1 mark)



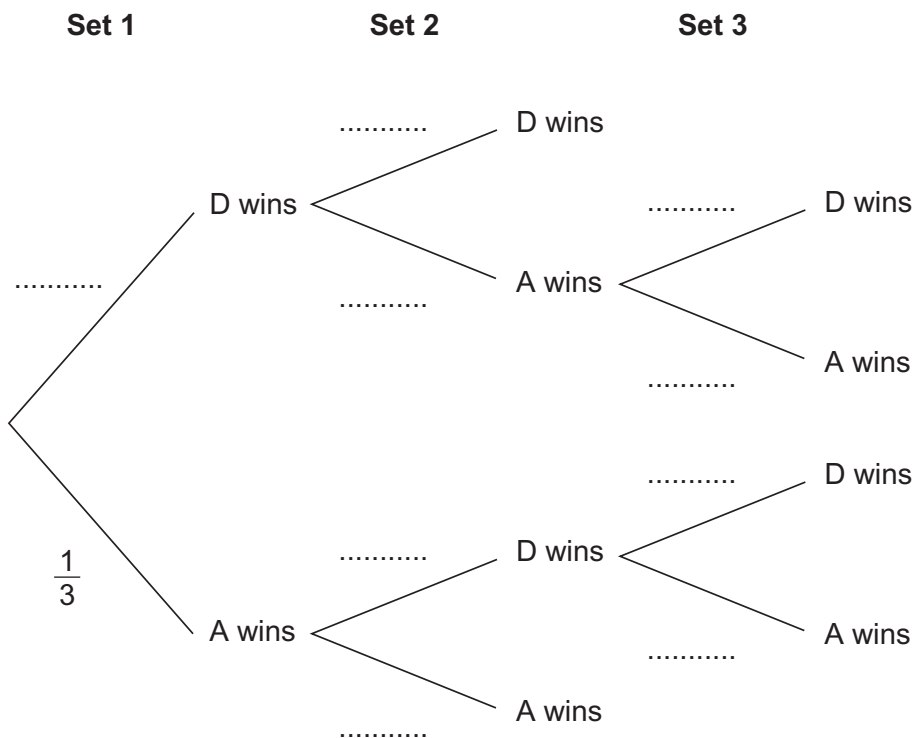
10 Damon (D) and Ali (A) play each other in a tennis match. The first player to win two sets wins the match. Each set is independent and they cannot draw a set.

The probability that Ali wins a set is $\frac{1}{3}$

10 (a) Write down the probability that Damon wins a set.

Answer (1 mark)

10 (b) The tree diagram shows all the possible outcomes. Complete the tree diagram to show **all** the probabilities.



(2 marks)

10 (c) Work out the probability that three sets are played and Damon wins the match.

.....

.....

.....

.....

Answer (3 marks)

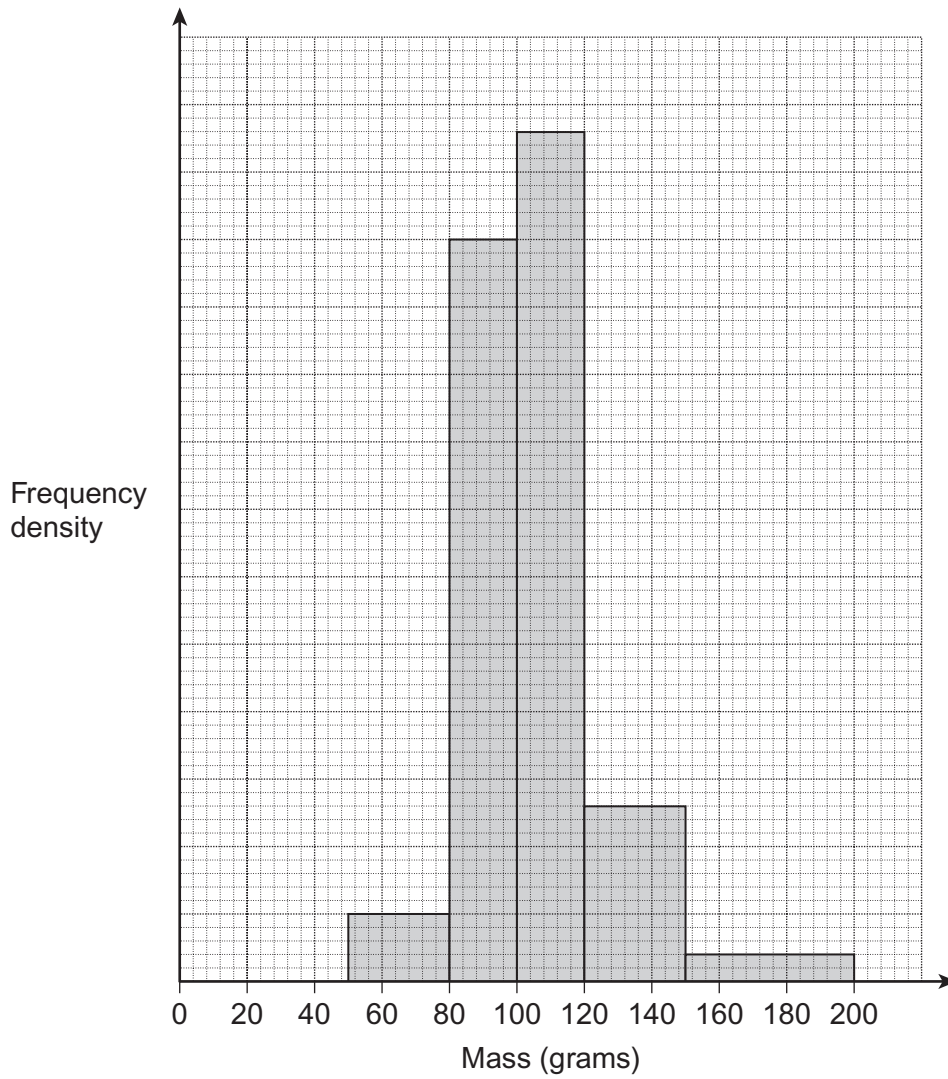
9

Turn over ►



11

A market gardener grows tomatoes.
The histogram represents the masses of the tomatoes he sold one week.



70 of the tomatoes sold were less than 90 grams.

How many were more than 130 grams?

.....

.....

.....

.....

.....

Answer

(3 marks)

END OF QUESTIONS

3



There are no questions printed on this page

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**



There are no questions printed on this page

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**

