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CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/53**

Paper 5 Investigation (Core) **May/June 2026**

1 hour 15 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen. Do **not** use correction fluid or tape.
- Do **not** write on any bar codes.
- You should use a graphic display calculator where appropriate.
- You may use tracing paper.
- You must show all necessary working clearly, including sketches, to gain full marks for correct methods.
- In this paper you will be awarded marks for providing full reasons, examples and steps in your working to communicate your mathematics clearly and precisely.

INFORMATION

- The total mark for this paper is 40.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **8** pages. Any blank pages are indicated.

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[Turn over

Investigation Factors and multiples

In this investigation you will look at the connection between factors and multiples of numbers.

A factor of a number divides into the number without leaving a remainder.
A multiple of a number is in that number's times table.

Examples

Factors of 10 are 1, 2, 5 and 10	$10 \div 1 = 10$ remainder 0 $10 \div 5 = 2$ remainder 0	$10 \div 2 = 5$ remainder 0 $10 \div 10 = 1$ remainder 0
Any other number leaves a remainder	$10 \div 3 = 3$ remainder 1	so 3 is not a factor of 10

Multiples of 7 are 7, 14, 21, 28 and so on

$7 \times 1 = 7$ $7 \times 2 = 14$ $7 \times 3 = 21$ $7 \times 4 = 28$

1 **(a)** Complete these lists.

Factors of 6 1, 2, ... , 6

Factors of 8 1, ... , 4, ...

[2]

(b) Look at your answers to **1(a)**.

Write down the highest number that is in **both** lists of factors.

..... [1]

(c) Lists of multiples continue forever.

Complete these lists to show the first six multiples.

Multiples of 6 6, 12, ... , ... , ... , 36

Multiples of 8 8, 16, ... , ... , ... , 48

[2]

(d) Look at your answers to **1(c)**.

Write down the lowest number that is in **both** lists of multiples.

..... [1]

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(e) Complete this table.

	number	factors	first six multiples
	1	1	1, 2, 3, 4, 5, 6
	2	1, ...	2, 4, 6, 8, 10, 12
	3	....., 3	3, 6, 9, 12, 15, 18
	4	1, ..., 4	....., 8, ..., 16, ..., 24
	5	1, ...	5, 10, 15, 20, 25, 30
1(a) and 1(c)	6	1, 2, ..., 6	6, 12, ..., ..., ..., 36
	7	....., ...	7, 14, 21, 28, ..., ...
1(a) and 1(c)	8	1, ..., 4, ...	8, 16, ..., ..., ..., 48
	9	....., ..., ...	9, 18, 27, ..., ..., 54
	10	1, 2, 5, 10	10, 20, 30, ..., ..., ...

[4]

(f) Use the table in **1(e)** to help you answer these questions.

(i) Write down the highest number that is both a factor of 2 and a factor of 6.
This is the highest common factor (HCF) of 2 and 6.

..... [1]

(ii) Write down the lowest number that is both a multiple of 2 and a multiple of 6.
This is the lowest common multiple (LCM) of 2 and 6.

..... [1]

(iii) Write down the HCF and the LCM for 3 and 9.

HCF = ...

LCM = ...

[2]

(iv) Work out the HCF and the LCM for 7 and 9.

HCF = ...

LCM = ...

[3]

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2 **(a)** Complete these lists of factors and multiples of 12.

Factors of 12 = 1, 2, ... , ... , ... , ...

Multiples of 12 = 12, ... , ... , ... , 60, 72

[2]

(b) Use **1(e)** and **2(a)** to find the HCF and the LCM of 9 and 12.

HCF = ...

LCM = ...

[1]

3 When you are looking for the lowest common multiple (LCM) of two numbers you can write as many multiples of each number as you need.

(a) Complete this table.

	numbers (*a* and *b*)	**HCF**	**LCM**	***a*** × ***b***
1(b) and 1(d)	6 and 8			48
1(f)(iii)	3 and 9			27
	5 and 9			45
2(b)	9 and 12			108
	4 and 6			
	3 and 10			
	8 and 14			

[6]

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(b) Write down a connection between the HCF, the LCM and $a \times b$.

..... [1]

(c) Show that your connection in **3(b)** is correct for the numbers 9 and 15.

[3]

(d) 16 and another number have an HCF of 4 and an LCM of 80.

Find the other number.

..... [3]

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4 These are the first nine prime numbers.

2, 3, 5, 7, 11, 13, 17, 19, 23

Numbers can be written as products of their prime factors.

Examples

$8 = 2 \times 2 \times 2$ $\quad$ $15 = 3 \times 5$ $\quad$ $48 = 2 \times 2 \times 2 \times 2 \times 3$

(a) Complete these products of prime factors.

20 = ... × ..... × .....

30 = ... × ..... × .....

[2]

(b) Use your answers to **4(a)** to find the HCF and LCM of 20 and 30.
Give each answer as a product of prime factors.

HCF = ...

LCM = ...

[2]

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(c) Two numbers, A and B, are each written as a product of prime factors.

$$A = 3 \times 5 \times 7$$
$$B = 2 \times 7 \times p$$

$A \times B = 24\,990$

Find the LCM of A and B.
Give your answer as a product of prime factors.

..... [3]

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