MATHEMATICS ADVANCED YEAR 11 - MODULE 1 - LESSON 3

Domain & Range

Use this worksheet after reading the lesson to practise the key ideas and prove you can meet the success criteria.

Name _____

Date _____

Class _____

1. Key Ideas

Try typing $\sqrt{-1}$ into a basic calculator. It throws an error. That is not a bug — it is a domain restriction. Every function has boundaries, and knowing where they are is what separates a correct answer from a careless mistake.

- The definitions of domain and range
- Why division by zero is undefined

2. Success Criteria

By the end, you should be able to:

- The definitions of domain and range
- How to write domains and ranges in interval notation
- The three main types of domain restrictions

3. Key Terms

range
the complete set of output values (y-values) that the function can produce

$[a, b]$
all numbers from a to b, including both endpoints

(a, b)
all numbers from a to b, excluding both endpoints

That
not a bug — it is a domain restriction

and knowing where they
is what separates a correct answer from a careless mistake

function
the complete set of input values (x-values) for which the function is defined

4. Activity: Build the Lesson Map

Use the lesson to complete the table. Keep answers brief but specific.

Prompt	Your answer
Main concept	
Important example	
Common mistake to avoid	
How this links to the next lesson	

5. Short Answer Questions

1. Explain this lesson goal in your own words: "The definitions of domain and range". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "How to write domains and ranges in interval notation". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Domain & Range: "The three main types of domain restrictions".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Domain & Range but does not use evidence or reasoning.

Improve the answer by writing a stronger response that uses accurate terminology, a relevant example and a clear explanation.

7. Multiple Choice

1. What is the best first step when answering a question about Domain & Range?

☐ A. Identify the key concept being tested

☐ B. Write every fact from memory

☐ C. Ignore the command word

☐ D. Skip examples and evidence

2. Which answer would show stronger understanding of Domain & Range?

☐ A. An answer with accurate terms and reasoning

☐ B. A copied definition only

☐ C. A single-word response

☐ D. An answer with no example

3. What should you do if a question asks you to explain?

☐ A. Link the idea to a reason or cause

☐ B. List unrelated facts

☐ C. Only draw a diagram

☐ D. Write the shortest possible answer

8. Success Criteria Proof

Finish with evidence that you can do each success criterion.

SUCCESS CRITERION 1

Prove that you can: The definitions of domain and range

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: How to write domains and ranges in interval notation

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: The three main types of domain restrictions

BAND 5 4 MARKS

One thing I still need help with: