

Making Notes | Lesson 2.1 — Inductive Reasoning

Part 1 — The Three Things You Need to Know

Inductive Reasoning	Strengths	Fundamental Weakness
Definition:	Humans are good at:	
A conjecture is:	Useful for:	

Part 2 — The Distinction That Changes Everything

'The pattern continues.'	'We can explain WHY it must continue.'
What kind of reasoning is this?	What have you done beyond inductive reasoning?
How strong is this claim?	Why is this claim stronger?

The Handshake Problem is the example of the second column. Write here:

The formula is: and it works because:

Part 3 — The Circle Task (The Gut-Punch)

Rule: place dots on a circle and connect every dot to every other dot. Record the number of sections the circle is divided into.

Dots (n)	1	2	3	4	5
Sections					

Our conjecture: $S =$
Our prediction for $n = 6$: _____

Now test it for 6 dots.

Actual count for $n = 6$: _____

What happened? Write your explanation here:

The Lesson from the Circle Task

We checked **5** cases and our conjecture held every time.
That was not enough. The pattern failed at case **6**.
In your own words, finish this sentence:
'No matter how many cases confirm a conjecture, you cannot conclude it is always true unless...'

Part 4 — Why This Matters

The circle task raises a question that will drive the rest of this unit:

If checking examples is not enough to prove something, what IS enough?

Your thoughts: (we will answer this properly in Lesson 2.2)