SEQUENCES

A NUMERICAL SEQUENCE

Definition Numerical Sequence

A **numerical sequence** is an ordered list of numbers $(u_0, u_1, u_2, \dots)$ defined by a rule.

n	0	1	2	...
u_n	u_0	u_1	u_2	...

The number u_n is called the **nth term** of the sequence.

Ex: What is u_4 of this sequence?

n	0	1	2	3	4	5	...
u_n	3	5	7	9	11	13	...

Answer: $u_4 = 11$.

B DEFINITION USING A RECURSIVE RULE

Definition Recursive Rule

A sequence can be defined by:

- the **first term** (starting number), and
- a **recursive rule** that tells how to obtain each term from the previous one.

Ex: Write the sequence defined by: the first term is 2, and each term is obtained by adding 3 to the previous term.

Answer:

$$(\ 2\ ,\ 5\ ,\ 8\ ,\ 11\ ,\ 14\ ,\ \dots)$$