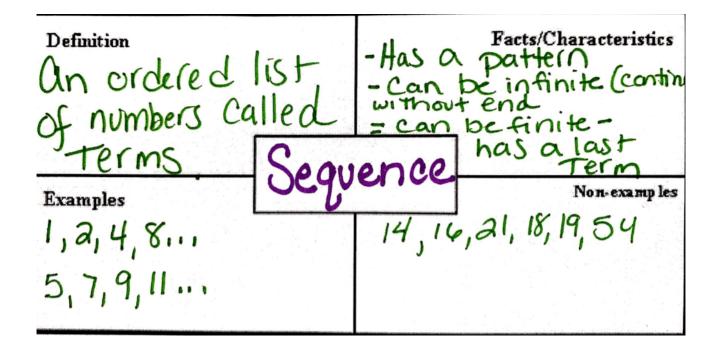
# Sequences & Series Introduction





## The petals of a flower are as follows:



Can you find the next four values?

### Sequence



• Terms represented by t:

$$t_1, t_2, t_3, \dots, \underbrace{t_{n-1}}_{n-1}, t_n$$
The term before  $t_n$ 

# **Explicit Formula**



• Formula that defines the nth term.

(Plugging in the term # "n")

Write the first four terms of the sequence defined by the explicit formula :



t,

$t_{n}$	=-4n+5	
rı	-4(1)+5 -4(3)+5 4(4)+5	
	-4(2) -u(3) -u(4)	

n	1	2	3	4	
t	1	-3	-7	-11	

Write the first four terms of the sequence defined by the explicit formula :



$$t_n = 2^n - 1$$

n	ı	2	3	4	
t	1	S	7	15	

Write the first four terms of the sequence defined by the explicit formula :  $t_n = 2 + \left(-1\right)^n$ 



n			
1			

### **Recursive Formula**



- One or more previous terms are used to generate the next term.
- Find the next three terms:
- 4, 7, 10, 13, 16, 19, 22, 25 2, -6, 18, 54, 162, -486, 1,458
- 1, 4, 9, 16,

Write the first four terms of the sequence defined by the recursive formula:



$$t_{2} = 2t_{n-1} + 8$$

$$t_{1} = 5$$





Write the first four terms of the sequence defined by the recursive formula :

$$t_n = -3t_{n-1} + 2$$

$$t_1 = 2$$



n	1				
t	Q	- 4	14	- 40	

#### Back to the petals of a flower:



Can you write a recursive formula for this?

Write a recursive formula for the sequence shown below and find the next three terms.



$$2, 8, 14, 20, 26, ...$$
 $t_{n} = t_{n-1} + c_{n}$ 

Write a recursive formula for the sequence shown below and find the next three terms.



7, 11, 15, 19, ...

Write a recursive formula for the sequence shown below and find the next three terms.



$$2, 7, 22, 67, \dots$$