

Sequences
An infinite list of numbers

Arithmetic

Pattern: $+/-$

change: constant difference

Recursive Equations \rightarrow Next = previous \pm

Explicit Functions

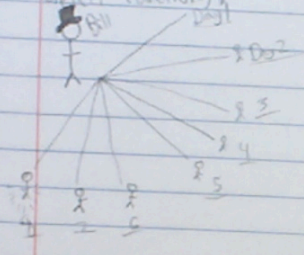
Geometric

Pattern: \times/\div

change:

Recursive: Next = previous \times/\div

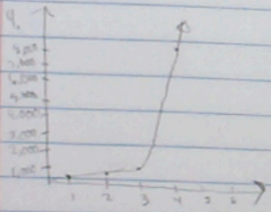
Explicit Function



My Thoughts
1. 8,000,000

2. Next = previous $\times 10$

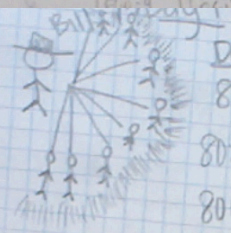
Days	Emails	Process
1	8	8×10^0
2	80	8×10^1
3	800	8×10^2
4	8000	8×10^3
5	80000	8×10^4
6	800000	8×10^5
7	8000000	8×10^6



Recursive Functions

Days	people	Recursion	EF
1	$f(1) = 7$		$f(1) = 7$
2	$f(2) = 10$		$f(2) = f(1) + 10 = 17$
3	$f(3) = 20$		$f(3) = f(2) + 10 = 27$
4	$f(4) = 30$		$f(4) = f(3) + 10 = 37$

Day	people	EF
1	$f(1) = 7$	$f(1) = 7$
2	$f(2) = 10$	$f(2) = f(1) + 2$
3	$f(3) = 17$	$f(3) = f(2) + 2$
4	$f(4) = 27$	$f(4) = f(3) + 2$



Day 2

80

Day 3

$80 \times 10 = 800000000$

Day 4

Days

Day 5
 $= \times 10$
 $= \times 10$
 $= \times 10$

Sequences

a infinite list of numbers
3, 5, 7, 9, 10000
 \rightarrow infant

Geometric

Pattern: \times/\div

Change: Recursive $\&$. Next = previous \times/\div

Explicit function

Rate

80
 $\times 10 \times 10 \times 10 \times 10 \times 10$

10x

Recursive functions

8, 80, 800, 8000

NEXT = previous $\times 10$

$$f(x) = f(x-1) \times 10$$

days	people	Recursive function
1	$f(1) = 8$	$f(1) = 8$
2	$f(2) = 80$	$f(2) = f(1) \times 10$
3	$f(3) = 800$	$8^2 \times 10$
4	$f(4) = 8000$	$f(3) = f(2) \times 10$
		$f(4) = f(3) \times 10$

↑
put in function notation

My Thoughts

- 8000,000 emails
- previous $\times 10$
- $8 \times 10^{x-1}$
 $f(x) = 8 \times 10^{x-1}$

Days	emails	cases
1	8	8×10^0
2	80	8×10^1
3	800	8×10^2
4	8000	8×10^3
5	80000	8×10^4
6	800000	8×10^5
7	8000000	8×10^6

