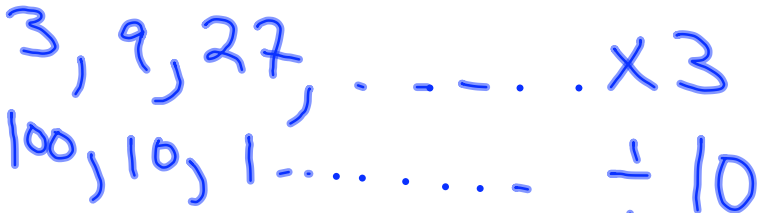
6.1 Sequences

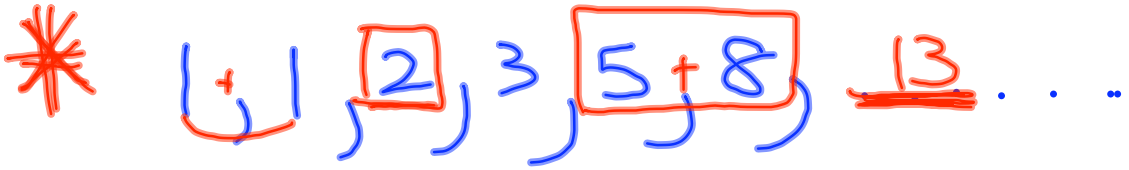
Read Pg. 260-61 and define the following

~~Arithmetic Sequence:~~

Geometric Sequence:



Recursive Sequence



Investigation #1:

min	Generation	Bacteria
30	1	2
60	2	4
90	3	8
120	4	16
150	5	32
180	6	64
210	7	128
240	8	256
270	9	572
300	10	1024

3
3.5

```
Plot1 Plot2 Plot3
nMin=1
u(n)=2*u(n-1)
u(nMin)=(2)
v(n)=
v(nMin)=
w(n)=
w(nMin)=
```

After how many hrs is their 70 bacteria?

Between 3 - 3.5 hrs

180 - 210

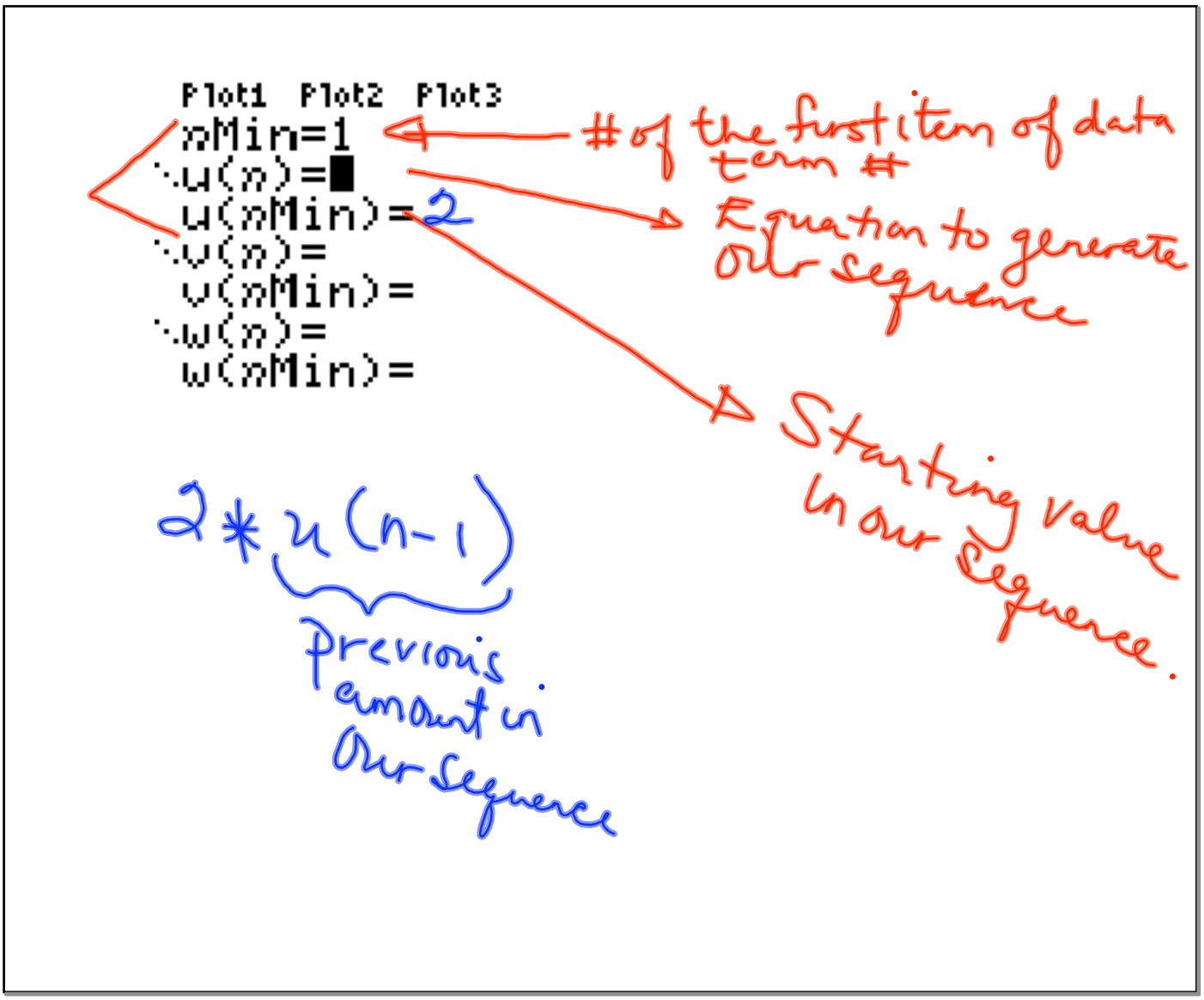
3.5 hrs

How many bacteria are there in generation 20?

1,048,576

How many bacteria after 600 min?

$\frac{600}{30} = 20$

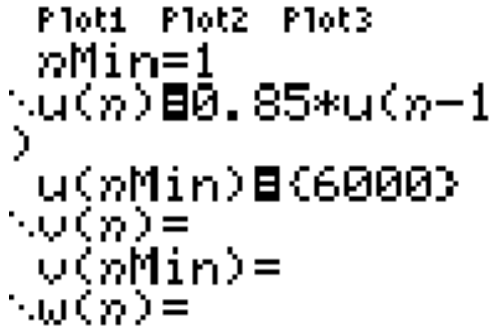

Plot1 Plot2 Plot3
nMin=1
u(n)=
u(nMin)=2
v(n)=
v(nMin)=
w(n)=
w(nMin)=
of the first item of data term
Equation to generate our sequence
Starting value in our sequence.
2 * u(n-1)
Previous amount in our sequence

Example 1:
A gas station has a tank that holds 6000 litres. It notices that each day the amount of gas remaining in the tank is 85% of the previous days amount.

a)Write a recursive equation for this situation.

$u(n) = 0.85 \times u(n-1)$

b) Use your calculator to determine on what day they have less than 300 litres remaining in the tank.



Day 20

Example 2:

A boxing week sale at Appara shoes works as follows. The first day a pair of shoes is full price of $90. Each day after that the price is reduced by 8%.

Write a recursive equation for this situation.

$u(n) = 0.92 * u(n-1)$

0.92: % remaining

On what day will the price of the shoes be less than $70?

$n_{min}: 1$

$u(n) = 0.92 * u(n-1)$

$u(n_{min}) = 90$

5th Day