

Collatz Conjecture

Start with a positive integer n .

Then do the following, until $n=1$.

if n is even, divide n by 2. ①

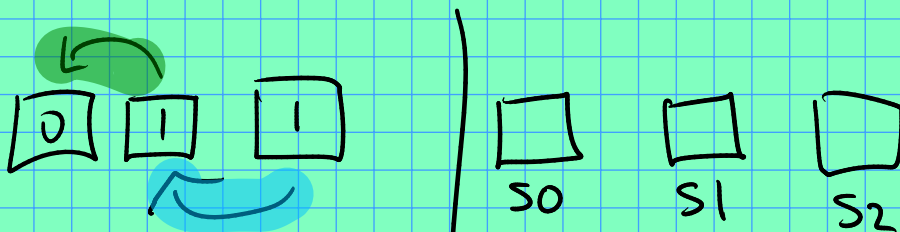
else multiply by 3 & add 1. ②

Ex: $5 \xrightarrow{\textcircled{2}} 16 \xrightarrow{\textcircled{1}} 8 \xrightarrow{\textcircled{1}} 4 \xrightarrow{\textcircled{1}} 2 \xrightarrow{\textcircled{1}} 1, \checkmark$

Fibonacci Sequence:

0 1 1 2 3 5 8 13 ...
 ⏟⁺

0 1 1 2 3 5 8 13 . . .



\Rightarrow 1 1 2 = 1+1

Now in C++:

```
int s0, s1, s2;  
s0 = 0; s1 = 1; s2 = 1;
```

```
while (...) {
```

$$S0 = S1;$$

$$S1 = S2;$$

$$S2 = S1 + S0;$$

}