

How many times will the following loop run?

```
for(int i=1;i<10;i*=2)
{
    System.out.println(i);
}
```

$i = i * 2$ $i++$

$i = 1 < 10$ ✓
 $i = 2 < 10$ ✓
 $i = 4 < 10$ ✓
 $i = 8 < 10$ ✓
 $i = 16 < 10$ FX

2 4 8

1
2
4
8

Which value(s) can be used to initialize i so that the loop is finite:

```
public static void main (String[] args) {
    for(int i=__;i>0;i=i%3)
    {
        System.out.print("*");
    }
}
```

A 1000
B 729
C 386
D 483

What will be the output the following code?

```
for(int i = 1; i < 5; i = i + 1){
    System.out.print(i + " ");
    i = i - 1;
}
```

Will following code generate error ?

```
public class Main {
    public static void main(String[] args) {
        for(int i = 0; i < 3; i++) {
            System.out.print(i + " ");
        }
        System.out.print(i + " ");
    }
}
```

What will be the output the following code?

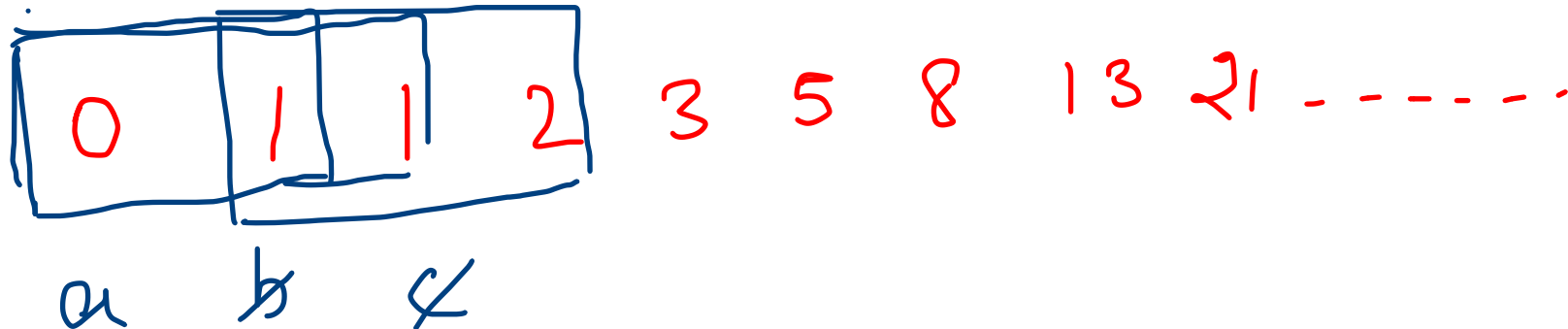
```
for(int i = 0; i < 5; i = i + 1){
    System.out.print(i + " ");
    i = i + 1;
}
```

Fibonacci Series \rightarrow sum of previous two will give next number.

0, 1 $f(0) = 0$

$f(1) = 1$

Original
series



int a = 0

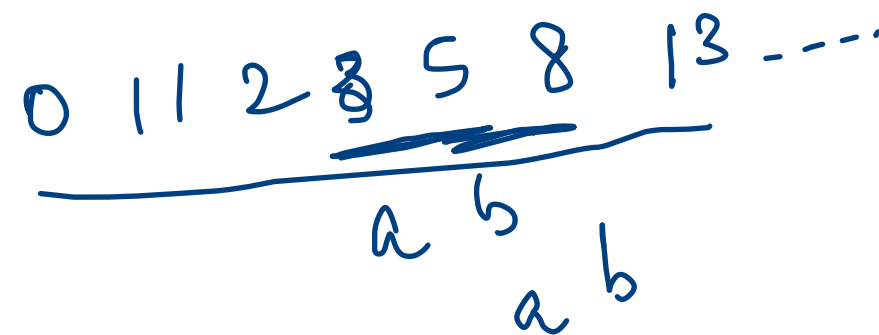
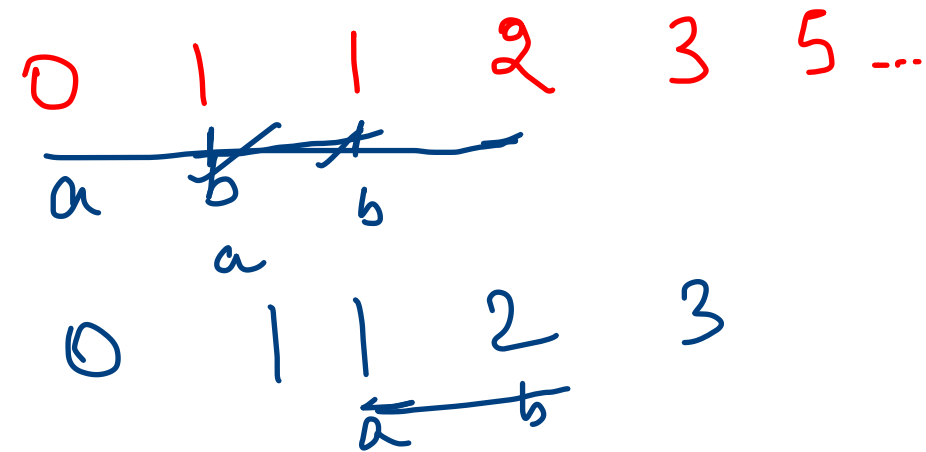
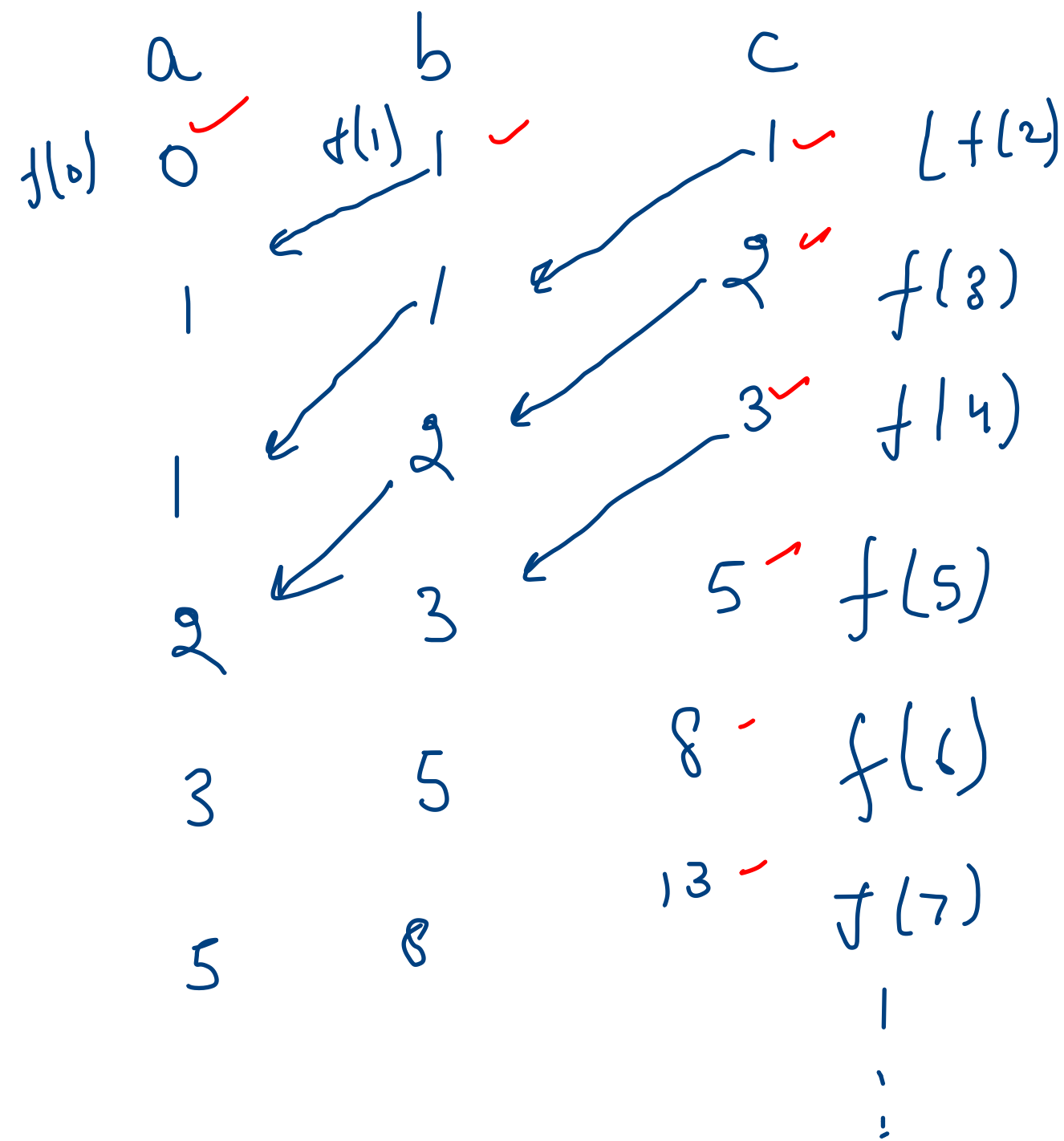
a b c

a b c

int b = 1

$c = a + b$

$a = b$
 $b = c$ \rightarrow update



0 1 1 2 3 5 8 13 - - - fibb.

0 1 2 3 4 5 6 7 - - - no.

Nth Fibonacci Number 7

$n = 10$

```
Scanner s = new Scanner(System.in);
int n = s.nextInt();

int i = 0;
int a = 0;
int b = 1;
int c;

while(i < n){
    c = a + b;
    a = b;
    b = c;
    i++;
}
System.out.print(a);
```

5/1 → 55

$i = 0 < 10 \text{ T}$

$1 < 10 \text{ T}$

$2 < 10 \text{ T}$

$3 < 10 \text{ T}$

$4 < 10 \text{ T}$

$5 < 10 \text{ T}$

$6 < 10 \text{ T}$

$7 < 10 \text{ T}$

$8 < 10 \text{ T}$

$9 < 10 \text{ T}$

$10 < 10 \text{ F}$
X

a	b	c
0	1	1
1	1	2
1	2	3
2	3	5
3	5	8
5	8	13
8	13	21
13	21	34
21	34	55
34	55	89
55	89	

```
public static void main(String[] args) {  
    Scanner s = new Scanner(System.in);  
    int n = s.nextInt();  
  
    int a = 0;  
    int b = 1;  
  
    for(int i = 0; i <= n; i++){  
        System.out.print(a + " ");  
        int c = a + b;  
        a = b;  
        b = c;  
    }  
}
```

Output

```
java -cp /tmp/DMYIoddMYk/HelloWorld  
10  
0 1 1 2 3 5 8 13 21 34 55  
=== Code Execution Successful ===
```