

$$\begin{aligned} &0/0 \\ &= \\ &(0, X_{\infty}) \end{aligned}$$

Damiens ROBERT

## Contents

<b>1</b>	<b>The Division as an algorithm</b>	<b>1</b>
1.0.1	The Metalanguage . . . . .	1
1.0.2	The Thought . . . . .	2
1.0.3	The Language . . . . .	2
<b>2</b>	<b>The remainder of <math>0/0</math></b>	<b>2</b>
<b>3</b>	<b>The quotient of <math>0/0</math></b>	<b>3</b>
<b>4</b>	<b>Conclusion</b>	<b>3</b>

## 1 The Division as an algorithm

### 1.0.1 The Metalanguage

A pseudocode is a Metalanguage. In a pseudocode, we can define a division as an operation denoted by

/

This operator has 3 different parts which are :

```
result = MYSTERY
number = number to divide
divisor = number that divides
```

The result of the division in this pseudocode is

```
result = number / divisor
```

The result is composed of 2 elements which are the quotient and the remainder.

```
result = (result.quotient, result.remainder)
```

### 1.0.2 The Thought

The compiler is the Thought. A Thought is what is thinking and it can also be called a Machine. A thought is the operation that translates a Metalanguage in a Language.

### 1.0.3 The Language

A programming language (Language) is the translation of a pseudocode (Metalanguage) by human thought (Thought).

This programming language can than be itself translated into another language, by example, a compiler in order to be executed by a machine.

```
// Initialisation
number = number to divide
divisor = number that divides
result = (quotient = 0, remainder = number)
// Computing
while (divisor > result.remainder) {
    result.remainder = number - divisor
    result.quotient = quotient + 1
}
// Result
return result
```

Let's notice that at each step of the iterator, the value of result.remainder and result.quotient varies the same way.

## 2 The remainder of 0/0

The variation of the remainder for a single step is :

```
result.remainder = number - divisor
```

When doing  $\text{MYSTERY} = 0 / 0$ ,  $\text{MYSTERY}.\text{remainder} = 0 - 0 = 0$   
When doing the same step  $n$  times, we obtain the vector,  $(0)$  that we can also write  $X(0_n)$

### 3 The quotient of $0/0$

The variation of the quotient for a single step is :

`result.quotient = quotient + 1`

When doing  $\text{MYSTERY} = 0 / 0$ ,  $\text{MYSTERY}.\text{quotient} = 0 + 1 = +1$

When doing the same step  $n$  times, we obtain the vector,  $(a_n)$  that we can also write  $+(1_n)$

I will now refer to my text on  $(+\infty) + (-\infty) = 0$  to justify that  $+(1_n)$  resolves to  $(+\infty)$  by saying that  $+1$  is a positive number.

Let's now notice that if we decremented the loop instead of incrementing it, only the sign would change, meaning we would then obtain  $(-\infty)$  as a quotient.

### 4 Conclusion

I will now conclude by saying that there are an infinite possibility for the sign and not only 2 (+ , -). I will demonstrate it in a text talking about symetry.

This infinity of possibilities for the signs are denoted by  $X$ .