# BLOCKCHAIN

## Ubiquu Data

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 0 1 0 1 0 1 1 0 | | 0 1 1 0 1 1 0 0 1 | | 1 0 1 1 0 0 0 1 1 |
| 0 1 0 1 0 1 0 1 0 | | 1 1 1 0 0 1 1 1 0 | | 0 0 1 1 0 1 0 1 1 |
| 1 0 1 0 1 0 1 0 1 | | 0 0 1 1 1 0 0 1 1 | | 1 1 1 0 0 1 0 0 0 |
| 0 1 0 1 0 0 1 0 1 | **c d** | 1 0 1 0 1 0 1 0 0 | **c e** | 0 1 0 1 1 1 0 1 1 |
| 1 0 0 0 1 1 1 0 1 | **a e** | 0 1 1 0 0 0 1 1 1 | **f d** | 0 0 0 1 0 0 0 1 0 |
| 0 1 1 1 0 0 1 0 1 | **f e** | 1 0 1 1 1 0 1 1 0 | **a a** | 0 1 0 1 0 0 0 1 1 |
| 0 1 1 1 1 1 0 1 1 | | 1 0 0 1 1 0 0 1 0 | | 0 0 1 0 1 1 0 0 1 |
| 0 1 0 0 1 1 0 1 0 | | 0 1 1 0 0 1 0 0 1 | | 1 1 0 0 1 0 0 1 1 |
| 1 0 1 0 1 0 1 1 0 | | 0 1 1 1 0 0 1 0 0 | | 1 1 0 1 0 0 0 1 0 |
| **a c e** | | **e a b** | | **a b e** |
| **f b a** | | **c d e** | | **c d f** |
| 1 0 1 1 0 1 0 0 0 | | 0 1 0 1 1 0 1 1 1 | | 0 1 1 0 1 1 0 1 1 |
| 1 1 1 0 0 0 1 1 1 | | 0 0 1 1 0 0 1 0 0 | | 1 0 1 1 1 0 0 1 1 |
| 0 0 1 0 0 1 0 0 1 | | 1 1 0 1 1 1 1 0 0 | | 0 0 1 0 1 1 0 0 1 |
| 1 0 0 1 1 0 1 1 0 | **c d** | 0 1 1 0 0 0 1 1 1 | **a c** | 1 0 1 0 1 1 1 1 0 |
| 0 1 1 0 1 1 0 1 1 | **e f** | 1 0 0 1 1 1 0 1 1 | **e a** | 0 0 1 0 1 0 1 1 1 |
| 1 0 0 0 1 1 1 0 0 | **a a** | 0 1 1 0 0 0 1 1 0 | **a f** | 0 1 0 0 1 1 0 1 0 |
| 1 0 0 1 1 0 0 0 1 | | 1 1 1 0 0 1 1 1 1 | | 1 0 1 1 0 1 1 1 0 |
| 1 0 1 0 1 0 1 1 1 | | 0 1 0 1 0 1 0 1 0 | | 1 0 0 1 1 0 1 0 1 |
| 0 1 1 1 0 0 1 0 0 | | 1 0 0 1 0 1 1 0 1 | | 0 1 1 1 0 1 0 0 1 |
| **e f a** | | **a e e** | | **f f d** |
| **b c d** | | **f f d** | | **e a b** |
| 0 1 1 1 0 0 0 1 1 | | 0 1 0 0 1 1 0 0 1 | | 0 0 1 1 1 1 1 0 1 |
| 1 0 0 1 0 1 1 1 1 | | 1 0 0 0 1 1 1 1 1 | | 1 0 1 1 1 1 0 1 0 |
| 0 1 1 1 0 0 1 1 0 | | 0 1 1 1 0 1 1 1 0 | | 0 1 0 0 1 0 1 1 1 |
| 1 0 1 0 1 0 0 1 1 | **a a** | 1 0 1 0 0 0 1 1 0 | **c e** | 1 0 1 0 1 0 1 0 0 |
| 0 1 1 1 0 0 0 0 1 | **b b** | 0 1 1 0 1 0 1 0 0 | **f a** | 0 1 1 1 1 0 1 0 1 |
| 1 0 0 1 1 1 0 0 0 | **c d** | 1 0 1 0 0 1 1 1 1 | **a f** | 1 1 0 0 0 1 1 1 0 |
| 1 0 0 1 0 1 0 0 1 | | 1 0 1 0 1 0 0 1 0 | | 1 0 1 0 1 1 0 1 1 |
| 1 0 1 0 0 1 1 0 0 | | 1 1 1 1 0 0 1 1 1 | | 0 1 0 1 1 0 0 1 1 |
| 0 1 1 1 0 0 0 1 1 | | 0 0 1 1 1 1 0 0 0 | | 0 1 0 0 1 0 1 1 0 |

# Immutable Data

# BLOCKCHAIN DE LOUSA

Curso de Blockchain Prandiano

=

d989d9aa059d7e54
9b05e0ff817f1641
941a6648712d2d0a
78ef599e6548c14f

SHA X 256

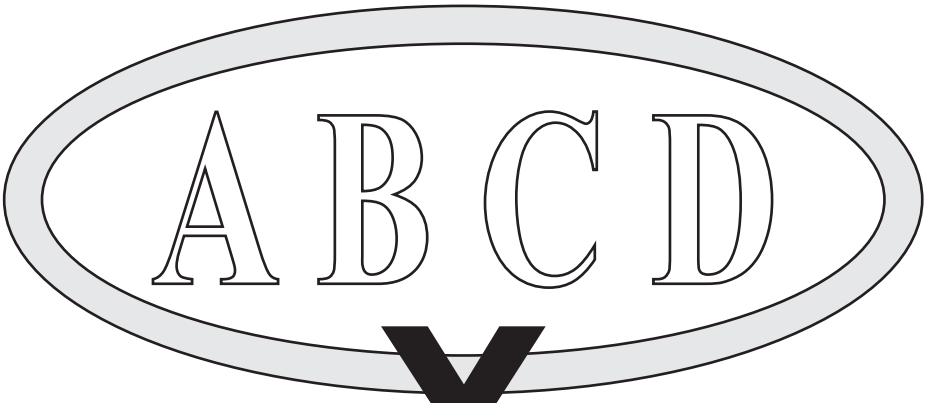
bf53c10ec1b5cdbe
7601204935f16b71
83cccedc9da01467
9bf1de03cf68eba4

=

Curso de Blockchaim Prandiano

# Mess With One Messed With Everyone

# SUBFACTORIAL




X

$$!n = n \cdot !(n-1) + (-1)^n$$

X


# Número de Desarranjos

# $\lfloor n$ Arranjos X Desarranjos $\rfloor\!\rfloor n$

| $\lfloor 1 = 1$ , $\rfloor\!\rfloor 1 = 0$ | $\lfloor 2 = 2$ , $\rfloor\!\rfloor 2 = 1$ | $\lfloor 3 = 6$ , $\rfloor\!\rfloor 3 = 2$ | |
|---|---|---|---|
| A | AB | ABC | ∘BCA |
| | ∘BA | ACB | ∘CAB |
| | | BAC | CBA |

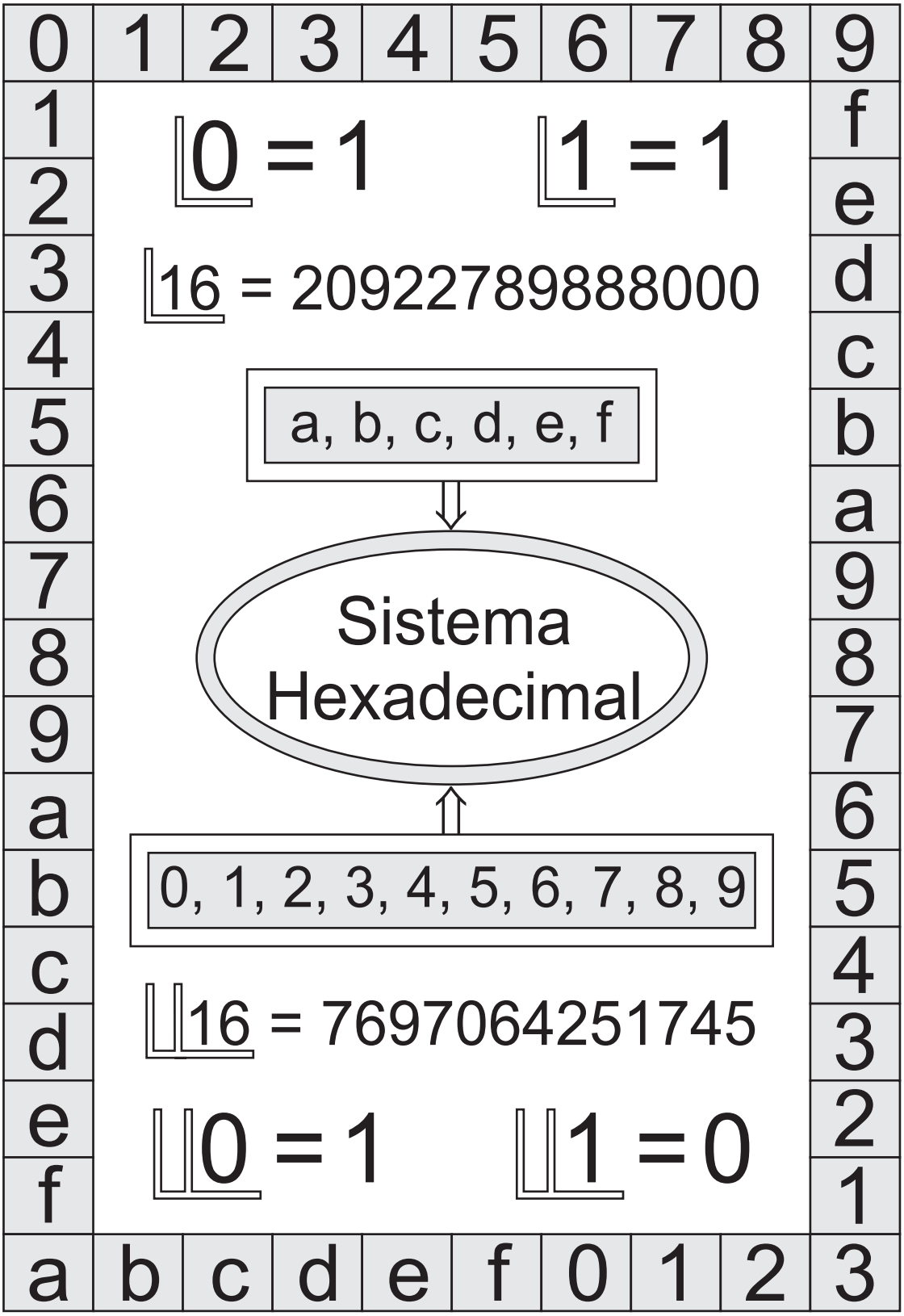
## $\lfloor 4 = 24$ , $\rfloor\!\rfloor 4 = 9$

| | | | |
|---|---|---|---|
| ABCD | BACD | CABD | ∘DABC |
| ABDC | ∘BADC | ∘CADB | DACB |
| ACBD | BCAD | CBAD | DBCA |
| ACDB | ∘BCDA | ∘CBDA | DBAC |
| ADBC | ∘BDAC | ∘CDAB | ∘DCAB |
| ADCB | BDCA | CDBA | ∘DCBA |

## $\lfloor 5 = 120$ , $\rfloor\!\rfloor 5 = 44$

| | | | | |
|---|---|---|---|---|
| ABCDE | BAEDC | CABDE | DABCE | EACBD |
| ABCED | ∘BAECD | ∘CABED | ∘DABEC | EACDB |
| ABDCE | BACDE | CADBE | DACBE | ∘EABCD |
| ABDEC | BACED | ∘CADEB | DACEB | EABDC |
| ABECD | BADCE | ∘CAEBD | ∘DAEBC | ∘EADBC |
| ABEDC | ∘BADEC | CAEDB | ∘DAECB | ∘EADCB |
| ACBDE | BCADE | CBAED | DBACE | EBCAD |
| ACBED | ∘BCAED | CBADE | DBAEC | EBCDA |
| ACDBE | BCDAE | CBDAE | DBCAE | EBACD |
| ACDEB | ∘BCDEA | CBDEA | DBCEA | EBADC |
| ACEBD | ∘BCEAD | CBEAD | DBEAC | EBDAC |
| ACEDB | BCEDA | CBEDA | DBECA | EBDCA |
| ADBCE | BDACE | CDABE | ∘DCAEB | ∘ECABD |
| ADBEC | ∘BDAEC | ∘CDAEB | DCABE | ECADB |
| ADCBE | BDCAE | CDBAE | DCBAE | ∘ECBAD |
| ADCEB | BDCEA | ∘CDBEA | ∘DCBEA | ∘ECBDA |
| ADEBC | ∘BDEAC | ∘CDEBA | ∘DCEAB | ECDBA |
| ADECB | ∘BDECA | ∘CDEAB | ∘DCEBA | ∘ECDAB |
| AEBCD | BEADC | CEADB | ∘DEACB | EDCAB |
| AEBDC | ∘BEACD | ∘CEABD | ∘DEABC | EDCBA |
| AECBD | BECAD | ∘CEBAD | ∘DEBAC | ∘EDACB |
| AECDB | BECDA | CEBDA | ∘DEBCA | ∘EDABC |
| AEDBC | ∘BEDAC | ∘CEDAB | DECBA | ∘EDBCA |
| AEDCB | ∘BEDCA | ∘CEDBA | DECAB | ∘EDBAC |

# Secure Hash Algorithm




# SHA

# 4.0 Arremate Epistêmico do Fazer Sígnico

$$\lfloor\lfloor 0 = \lfloor 0 = 1$$

$$\lfloor\lfloor 1 = \lfloor 1 \circ \left[\left[ \frac{1}{\lfloor 0} - \frac{1}{\lfloor 1} \right]\right] = 0$$

$$\lfloor\lfloor 2 = \lfloor 2 \circ \left[\left[ \frac{1}{\lfloor 0} - \frac{1}{\lfloor 1} + \frac{1}{\lfloor 2} \right]\right] = 1$$

$$\lfloor\lfloor 3 = \lfloor 3 \circ \left[\left[ \frac{1}{\lfloor 0} - \frac{1}{\lfloor 1} + \frac{1}{\lfloor 2} - \frac{1}{\lfloor 3} \right]\right] = 2$$

$$\lfloor\lfloor 4 = \lfloor 4 \circ \left[\left[ \frac{1}{\lfloor 0} - \frac{1}{\lfloor 1} + \frac{1}{\lfloor 2} - \frac{1}{\lfloor 3} + \frac{1}{\lfloor 4} \right]\right] = 9$$

$$\lfloor\lfloor 5 = \lfloor 5 \circ \left[\left[ \frac{1}{\lfloor 0} - \frac{1}{\lfloor 1} + \frac{1}{\lfloor 2} - \frac{1}{\lfloor 3} + \frac{1}{\lfloor 4} - \frac{1}{\lfloor 5} \right]\right] = 44$$

X

$$\lfloor\lfloor n = \lfloor n \circ \left[\left[ \sum_{k=0}^{n} \frac{(-1)^n}{\lfloor k} \right]\right]$$

X

$$\lfloor\lfloor n = n \circ \lfloor\lfloor n-1 + (-1)^n$$

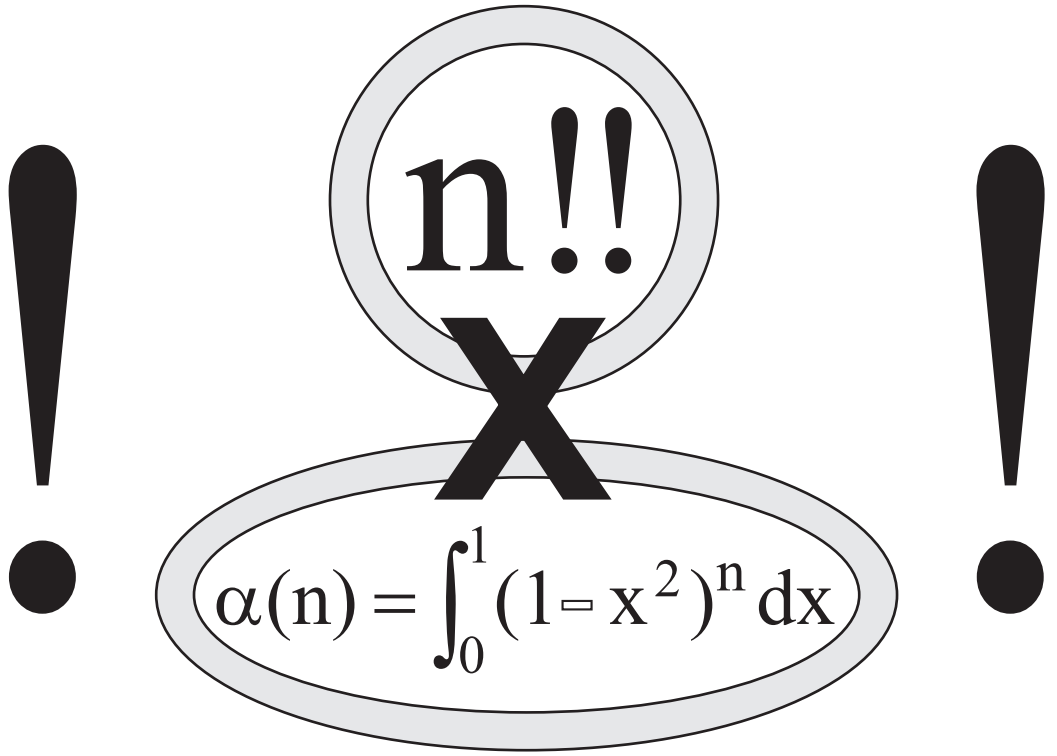
X

$$\lfloor\lfloor n \quad \lfloor\lfloor n$$

# Perceptos ou Unidades de Sentido

# DUPLO FATORIAL

$$1!! = 1$$
$$3!! = 3 \circ 1$$
$$5!! = 5 \circ 3 \circ 1$$
$$7!! = 7 \circ 5 \circ 3 \circ 1$$
$$9!! = 9 \circ 7 \circ 5 \circ 3 \circ 1$$




$$2!! = 2$$
$$4!! = 4 \circ 2$$
$$6!! = 6 \circ 4 \circ 2$$
$$8!! = 8 \circ 6 \circ 4 \circ 2$$
$$10!! = 10 \circ 8 \circ 6 \circ 4 \circ 2$$

# Função Integral Alfa

# 3.0 Combinatória Fatorial Enumerativa

$$\alpha(n) = \left(\frac{2n}{2n+1}\right) \circ \alpha(n-1)$$

**Função Alfa**

Feitura

Significa

$$\alpha(1) = \frac{2}{3}$$

$$\alpha(2) = \frac{4}{5} \circ \frac{2}{3}$$

$$\alpha(3) = \frac{6}{7} \circ \frac{4}{5} \circ \frac{2}{3}$$

$$\alpha(4) = \frac{8}{9} \circ \frac{6}{7} \circ \frac{4}{5} \circ \frac{2}{3}$$

$$\alpha(5) = \frac{10}{11} \circ \frac{8}{9} \circ \frac{6}{7} \circ \frac{4}{5} \circ \frac{2}{3}$$

$$\alpha(6) = \frac{12}{13} \circ \frac{10}{11} \circ \frac{8}{9} \circ \frac{6}{7} \circ \frac{4}{5} \circ \frac{2}{3}$$

$$\alpha(7) = \frac{14}{15} \circ \frac{12}{13} \circ \frac{10}{11} \circ \frac{8}{9} \circ \frac{6}{7} \circ \frac{4}{5} \circ \frac{2}{3}$$

$\alpha$ !!

$$\alpha(n) = \int_0^1 (1-x^2)^n \, dx = \frac{(2n)!!}{(2n+1)!!}$$

**Unidade de Sentido (Percepto)**

## Formatação do Duplo Fatorial

# 5.0 Possível Formatação do NONCE

## 5.1 Função Hiperfatorial H(n)

$$H(n) = \prod_{k=1}^{n} k^k = 1^1 \circ 2^2 \circ 3^3 \circ \circ \circ n^n$$

**Produtória de Potências**

## 5.2 Arbitrando um Possível NONCE (a, b)

Sorteia-se do conjunto $N^* = N - \{0\}$ os números a, b, que são aplicados na Função Alfa: [α(a) e α(b)]; sendo PN e PD os maiores Primos formadores do Numerador e do Denominador de α(n), respectivamente gera-se o NONCE com o "Hiperfatorial Aleatório" incompleto:

$$NO = [PN\alpha(\mathbf{a})]^{\mathbf{a}} \circ [PD\alpha(\mathbf{b})]^{\mathbf{b}} \begin{matrix} \circ \\ \circ \\ \circ \end{matrix}$$

**Nonce = Nonce (Primo Numerador, Primo Denominador)**

## 5.3 Exemplo de um NONCE (a = 3 , b = 4)

$$NO = [PN\alpha(\mathbf{3})]^{\mathbf{3}} \circ [PD\alpha(\mathbf{4})]^{\mathbf{4}}$$

$$NO = [(3)]^3 \circ [(7)]^4 = 64827$$

# NUMBER ✣ ONCE ⩵ NONCE