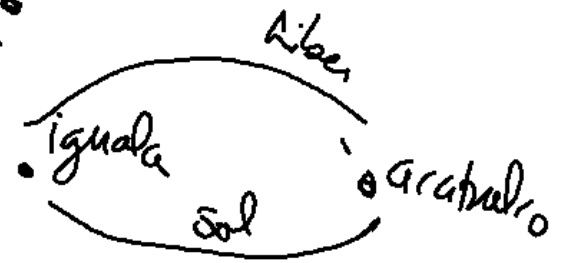
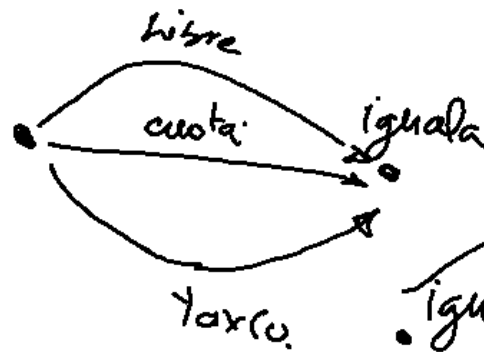
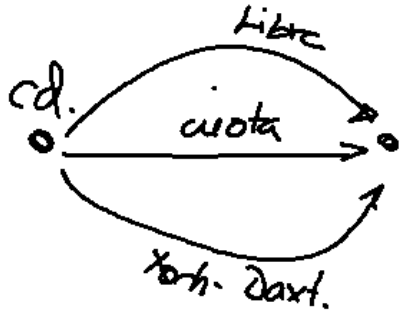
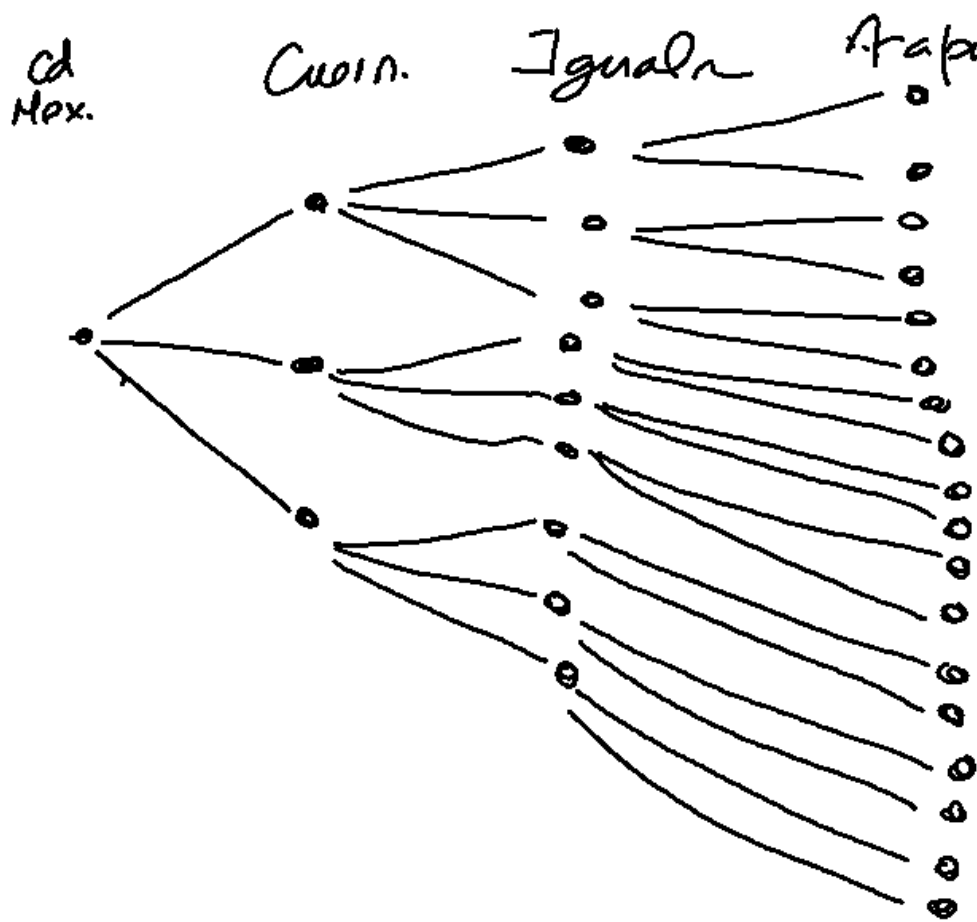


21 SEPTIEMBRE 2016

- + Regla de la multiplicación
- + Regla de la suma (adición).
- + Combinaciones y Permutaciones





R.M.

$$E_1 \Rightarrow n=3$$

$$E_2 \Rightarrow n=3$$

$$E_3 \Rightarrow n=2$$

$$3 \times 3 \times 2 = 18$$

$$A = \{a_1, a_2, a_3, \dots, a_n\}$$

$$B = \{b_1, b_2, b_3, \dots, b_m\}$$

$$AB = \{a_1 b_1, a_1 b_2, a_1 b_3, \dots, a_1 b_m, a_2 b_1, \dots, a_n b_m\}$$

$m \times n$ Regla de la multiplicación

$$A = \{a_1, a_2, a_3, \dots, a_n\} \quad \varphi = \frac{1}{n}$$

$$\underbrace{n \times n \times n \times \dots \times n}_k = n^k$$

arreglos
diferentes
con repetición

$$n=6 = 6^5 = 7,776$$

1,1,1,1,1

$$\frac{1}{6^5} = \frac{1}{7,776} \Rightarrow 0.01286\%$$

$$A = \{ a_1, a_2, \dots, a_n \}$$

$$n! = n \times (n-1) \times (n-2) \times (n-3) \times \dots \times (1)$$

factorial de n

Regla de multiplicación sin reemplazo.

AAA 999

$$n = 26$$

$$m = 10$$

$$(26) \times (25) \times (24) \times (10) \times (9) \times (8) = 11'232,000$$

$$A = \{a_1, a_2, \dots, a_n\}$$

$$n! = 1 \times (n-1) \times (n-2) \times (n-3) \times \dots \times (1)$$

factorial de n

Regla de multiplicación sin reemplazo.

AAA 999

$$n = 26$$

$$m = 10$$

$$(26) \times (25) \times (24) \times (10) \times (9) \times (8) = 11'232,000$$

Permutación

$$P_k^n = \frac{n!}{(n-k)!} \quad 0 \leq k \leq n$$

$$\underline{P_0^n = 1}$$

$$P_5^{100} = \frac{100!}{(100-5)!} = \frac{100 \times 99 \times 98 \times \dots \times 95!}{95!}$$

$$n! = n \times (n-1)!$$

$$\therefore (n-1)! = (n-1) \times (n-2)! \quad = 100 \times 99 \times 98 \times 97 \times 96$$
$$9,034,502,400$$

$$P_2^{10} = \frac{10!}{(10-2)!} \Rightarrow \frac{10 \times 9 \times 8!}{8!} \Rightarrow 10 \times 9 \Rightarrow 90$$

n_1 conj elementos iguales entre si

n_2 conj elementos "

...

n_m " " " " " "

$$P = \frac{n!}{n_1! \times n_2! \times \dots \times n_m!}$$

$$n_1 + n_2 + \dots + n_m = n$$

4 comp. iguales HP

3 comp iguales Acer

3 comp iguales Dell

10

$$P_{4,3,3}^{10} = \frac{10!}{4! \cdot 3! \cdot 3!} = \frac{10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4!}{4! \cdot 3! \cdot 3!}$$

indistinguishable.

$$= \frac{10 \times 9 \times 8 \times 7 \times 6 \times 5}{3! \cdot 3!} = \frac{151,200}{36}$$

$$= 4200$$

Combinaciones

($ab \neq ba$) Permutaciones $P_k^n = \frac{n!}{(n-k)!}$

($ab = ba$) Combinaciones

$$C_k^n = \frac{n!}{k!(n-k)!}$$

$$P_k^n = k! C_k^n$$

$$C_3^{10} = \frac{10!}{3!(10-3)!} \Rightarrow \frac{10 \times 9 \times 8 \times 7!}{3! \times 7!} = \frac{10 \times 9 \times 8}{6} = 120$$

$$3! = 3 \times 2 \times 1 \Rightarrow 6$$

$$4! = 4 \times 3! = 24$$

Real Calc
ubuntu 16.04 32

$$8! = 40320$$

. Teorema de Bayes.