CHAPTER 4

EDUCATIONAL REVIEW

Educational review:

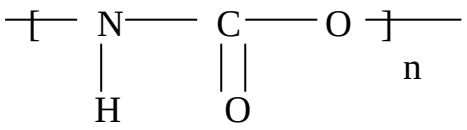
Of all the theories that arise in our imagination there are only a few that pull ahead (among them there are observations, such as hypertension, - which will be discussed later in this chapter, smoking, about the antimatter cyberspace, laziness, osmosis, lactic acid, the defense system of snails, the mystery of life, premature aging...It's like whoever comes out to party or to get fun and choose the girls to talk with; from many options I take only a few and the majority are mere chance.

Everything seems a likely story but with more than one variable: female beauty, a certain local time steps, ratio male/female, age...

As an antidote to being afraid of the public, must be open and receptive to conferences or meetings and take notes as they do. Conceive an own style and self confidence. From the first, usually it takes time and practice. Hence the name of the chapter
Educational Review, referring among other things a series of reveal interesting observations that can go during the progress of a class.

We start with an exhibition of molecules and **polymers** famous good to know:

1. *Polyiurethane*:



2. *polystyrene*: $-[CH_2-CH(Ph)]_n-$ $\qquad$ $CH_2=CH(Ph)$

3. *polyester*:

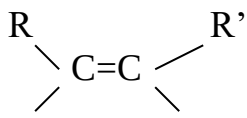
$$-[C(=O)(CH_2)_4-C(=O)-N(CH_2)_6]-N-C(=O)(CH_2)_4-$$

In other words Nylon 6,6

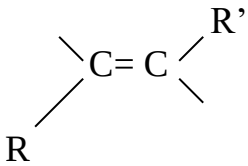
4. *polyvinil chloride* (PVC): the monomer is as follows:

$$CH_2=CH(Cl)$$

5. *polyacetile*:



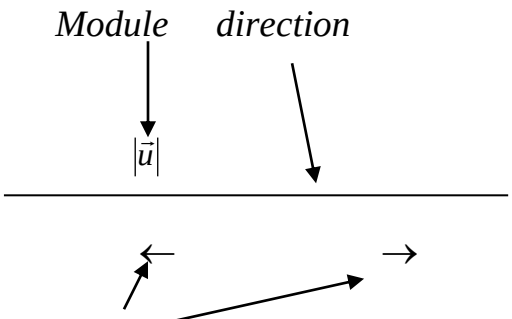
CIS



TRANS

From now on, the vectors, to point out: $\vec{a}$, $\vec{v}$,etc… the magnetic moments, electric or electromagnewtic fields also ($\vec{H}$, $\vec{\mu}$, $\vec{B}$,…).

Module direction, sense:



the module of $\vec{u}$ is the value in nº's, of the length of the segment and is represented by $|\vec{u}|$

Potential produced by punctual charges:
Calculate the potential at point P.

q_1 .

q_2 .

q_3 . q_0 (point P)

q_4 .

But you should know the following equation

$$V = [1/(4\pi\varepsilon o)].\ \sum_{i=1}^{n} q_i / r_i$$

We know that E (electric field)= F (force)/ q_0 (punctual charge).

While:

$$\Delta V \text{ (potential difference)} = V_b - V_a = \int_a^b E.dr$$

And proporcionality ctnt. can come from the calculation of a surface of a sphere along with ε_0 (permitivity vacuum) $4\pi r^2$.(¿an hypothesis?).

Calculation of *límits:*

$$\lim_{n\to\infty} \sum_{i=1}^{n} n_i / n!$$

if it results ∞/ ∞ we apply the L'**Hôpital**
however, it we find ∞/ 0, it results ∞.

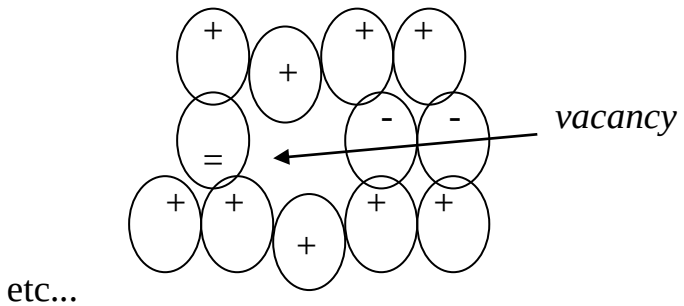
L'Hôpital means derivate as the numerator as the denominator separately ands get a new expression in which we can later calculate it.

Among topics and issues also propose simple calculations to speed up the brain with abstract calculations:

What does it mean many nº's in the middle of *nº's first*? If within a minute is poured from a tank the ¾ of its capacity when poured into 2 hours? And if it spends 12’5 hours in pour half of its capacity? And in an hour, how many liquid it pours if we refer to another tank that has 2/3 less capacity than the first?.

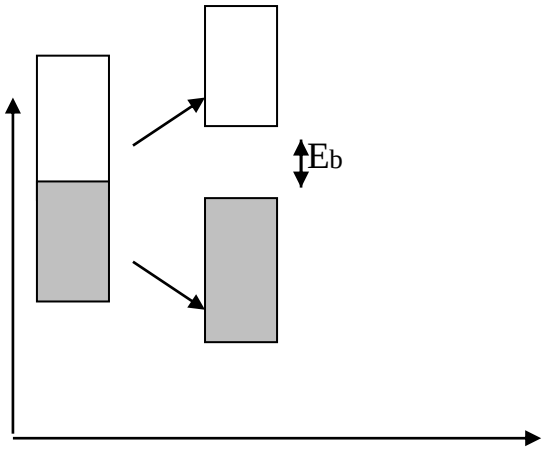
Doped Networks:

Needed adding an ion q (2 +) to neutralize the charges, but the volume will deform the crystal, and therefore capable to disintegrate:



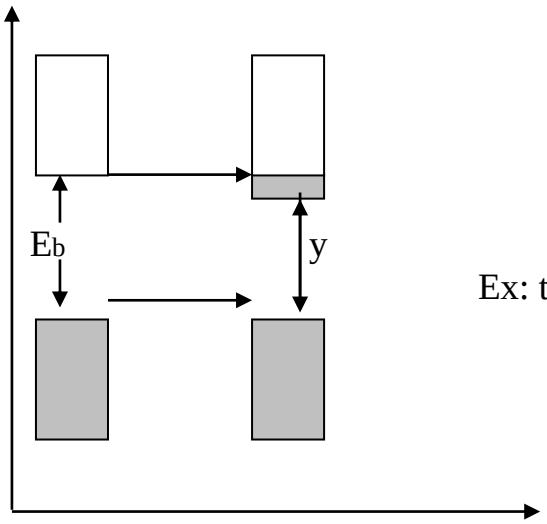
where the – show “q-“ and + show “q+”.

Let us now speak of **semiconductors:**



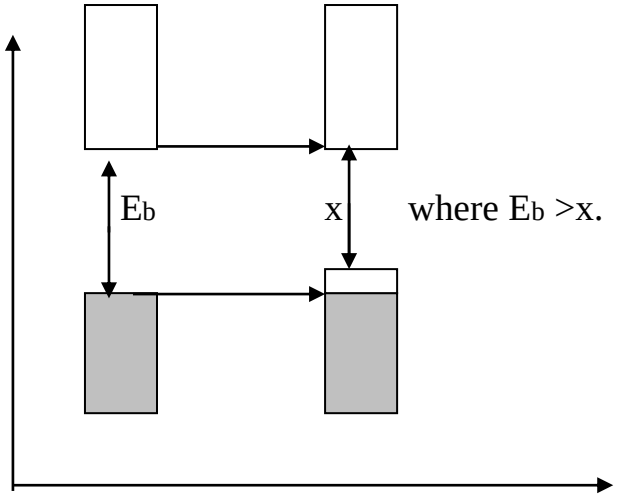
E_b or "*gap*", Feature of each semiconductor

Now, if adding the Li^0, which is an *electrodonore substance electrodonora*, will follow corresponding as a *n-type semiconductor*:



where $E_b > y$.
Ex: trans-polyacetile + Li^0

However if we use an, *electroacceptor substance* (Br_2), will obtain a *p-type semiconductor*:



Analyzing poliacetilè now, if it's TRANS the distances are mainly in the range, and are semiconductors. Therefore, the Eb (from the point of view of electricity)

However, if CIS, the distances are different and does not exist conduction (because it is a case of isolation). Could
be due to steric impediments).

The graph is a kind of collusion in which we place coordinates in a certain way.

A clear vision of the subject to be taught. This can be understood in silence as a review of knowledge in the brain and Engravings which then must be exposed in a classroom where you are the charge. Such symptom is considered schizophrenic or unhealthy, but at the end of the world there had not even me feel ashamed but take it with dignity. Such disease is considered largely from the pharmaceutical and come from organism and attracts me as I check for myself the effects of medication.

The e^- produces a *magnetic moment* ($\vec{\mu}$) that makes manifest when applying an external magnetic moment ($\vec{H}$).

Chance is more involved in the artistic world, whereas in science (physics quantum or others such as the wave function) the scientist discourse begins to be more accepted.

as a chemist,... I find my health with medicals when many of my colleagues produce medicines to remedy.(It's like a vicious circle).

In Mars, the gravity is ¼ than at the earth.

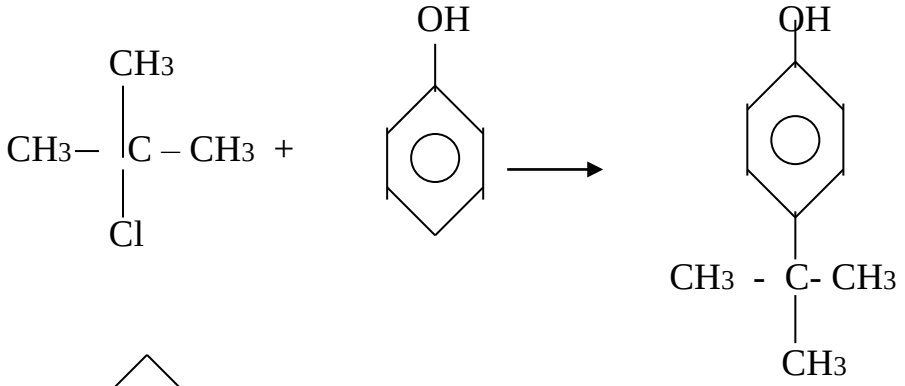
While light waves are quantized, the waves hertz radio as well?.

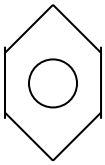
Osmosis: the transfer of part of the less concentrated solution the other side of the container (separated by a membrane semipermeable) so as to equalize concentrations.

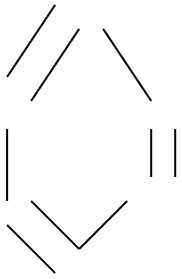
The **circulation** matches the earthworms. Is propper to have a car in front when travelling, so that you your speed The more speed the more preference, until the collapse.

Results: Young people have more chance of having an accident. age also increases the security, who instead begins not see the dangers.

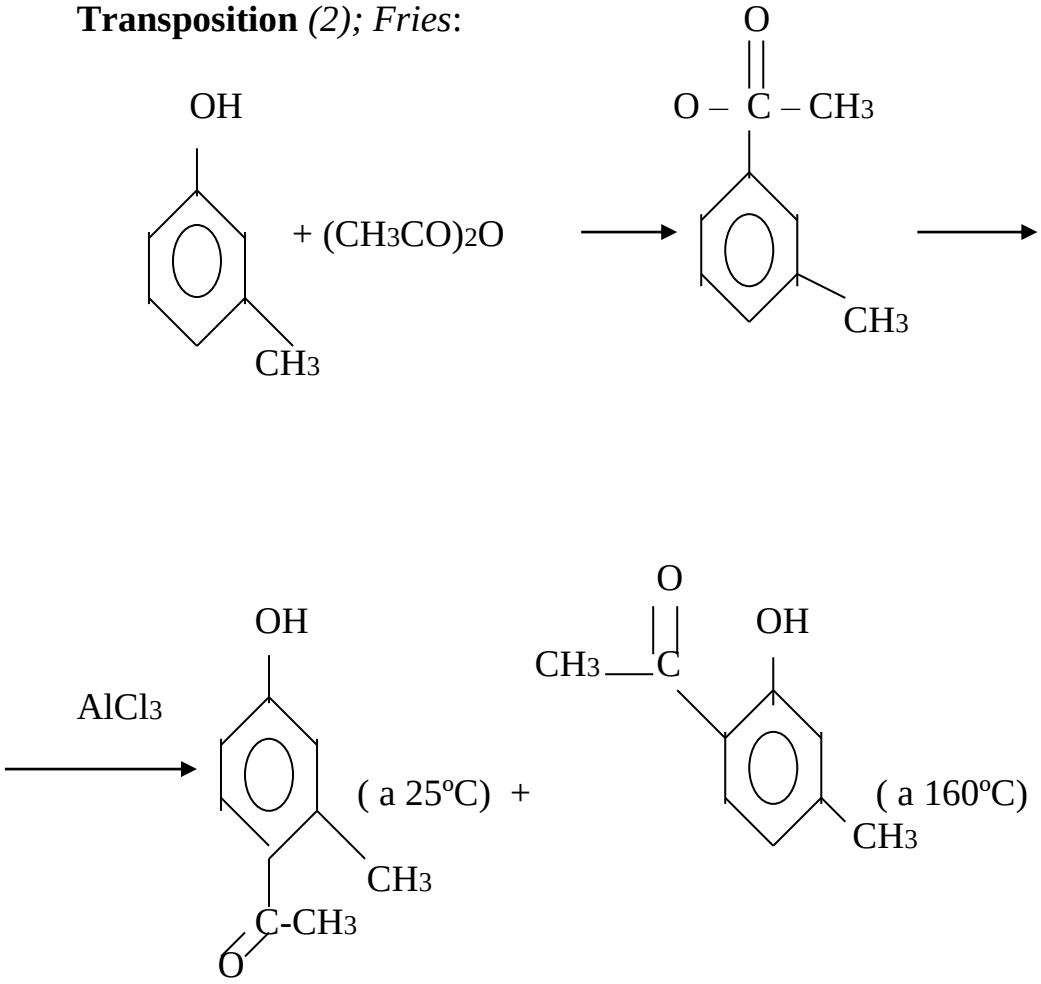
Transposition *(1); Friedl-Crafts*:



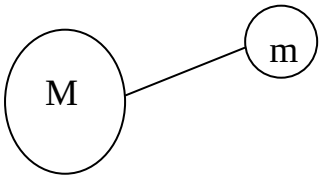
Where  is *benzene* and means:



Transposition *(2); Fries*:



Rigid rotor: it is never clear that the mass of the atom is in the center. The e^- and nucleous form this rotor: it's core becomes the gravity center and then the reduced mass:



$\mu = m.M/(m+M)$.

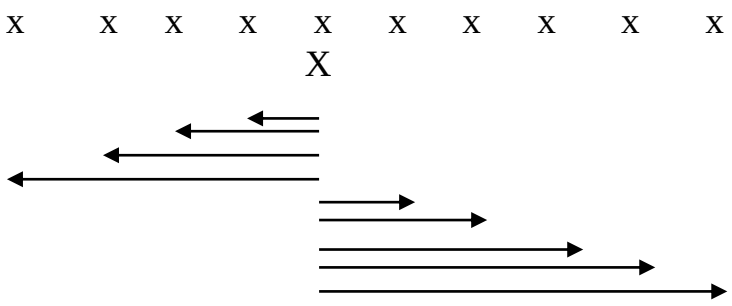
A jersey, as it is synthetic, absorbs heat and leave the cold aside (so ice never ends to melt).

Statistics:

Multiple linear regression: between many results, write the line best fits the ideal line).

Does it exists also the difference between the value stated and the "ideal" which results in a *lineal correlation* (r) [if r=1, all the points fit with the linear, whereas if r=0 we only have a cloud of points].

].



Average : $\bar{x} = \sum_{i=1}^{n} x_i / n$ while referring to the *medium:* x value repeated over the orderly distribution of data ($x_1,...,x_n$); that is the value in the middle; if the nº's are even, we take the two lay in the middle and stablish the average.

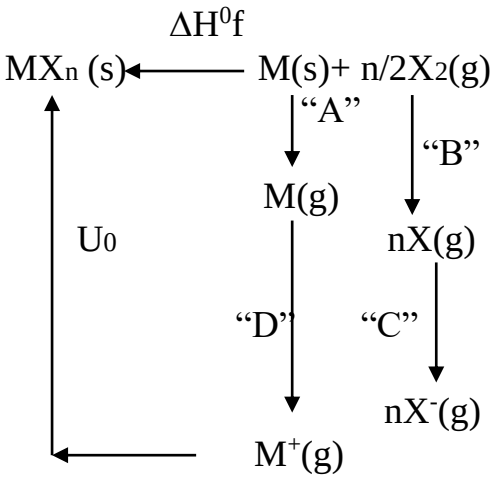
Classification Nº's:
Natural (N): 1, 2, 3 ...
Integers (Z) -1, -2, -3, 0, 1, 2, 3 ... ...
Rational: all above plus the fractional (2 / 3, 1 / 3 ...)
Irrational: also called ideal: π, the nº e, ...
Real (R): all previous.
Imaginaries: y= a + bi where i= $\sqrt{-1}$

Born-Haber cycle:

- enthalpy of sublimation (A)
- energy of dissociation (B)
- electron affinity ("C")
- ionization energy of metal ("D")
- lattice energy (U_0).
- formal enthalpy of formation of metal halide (ΔH^0f).

The attraction and repulsion can be understood as a relationship partner with the vicissitudes and sorrows, ups and downs. The fusion is even more intense and energetic and profound, as generates life.

Reaction:



The lattice energy (U_0) has a form which, together with the following parameter: [1-(1/n)].:

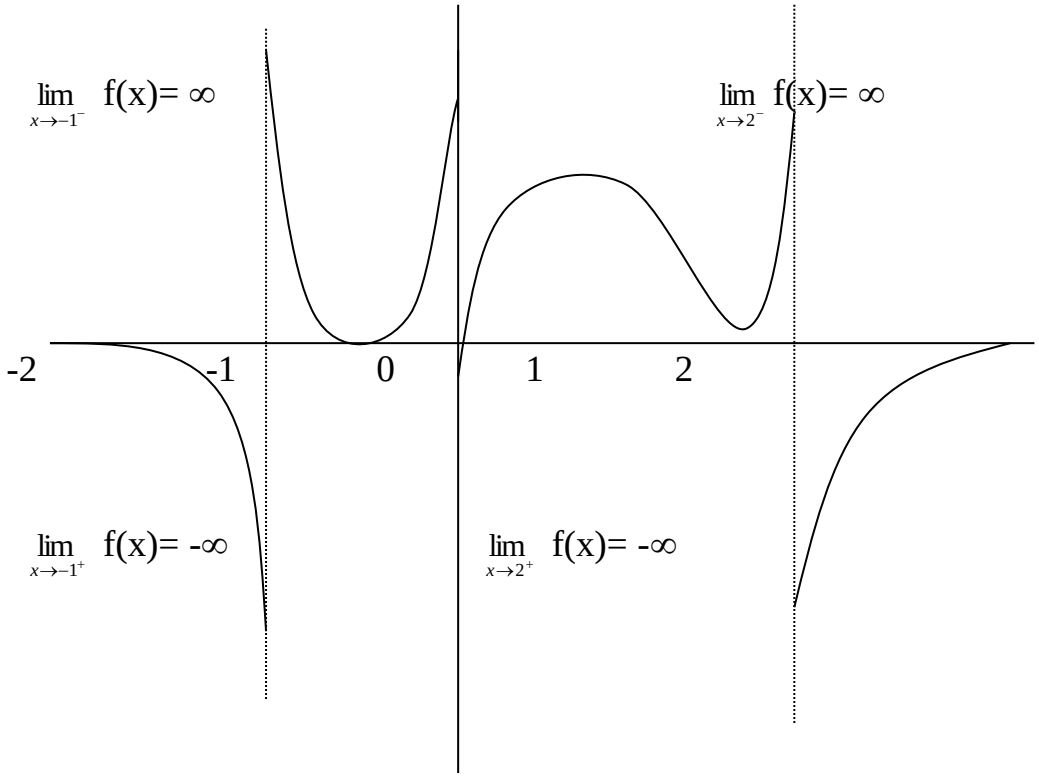
$$U0= (Na.A.z^{+}.z^{-}.e^{2})/(4\pi\varepsilon_0 .r).[1-(1/n)].$$

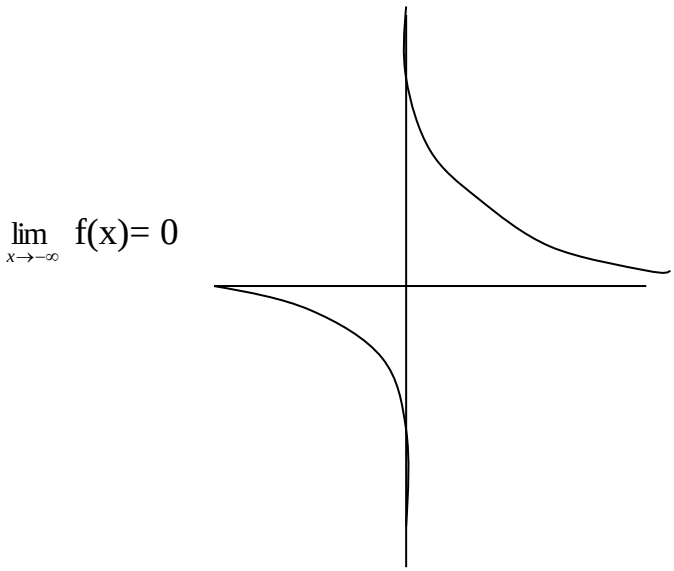
Where A, as n (so called Born exponent) is a ctnt obtained experimentally or from tables.
N_a is the Avogadro number, and U_0 is negative because the semirreaction
$M^{n+}(g) + nX^{-}(g) \longrightarrow MX_n(s)$ is *exothermic*

Before returning to see the limits, will a new paragraph on the topic of vices: I prefer smoking than more nights lost in leisure locals where everyone is and mask look great achievers helped by alcohol and transform the dream into being. All implicit ruling brings something to renounce, and this happens in many
disciplines of life

Limits I (fig.13)

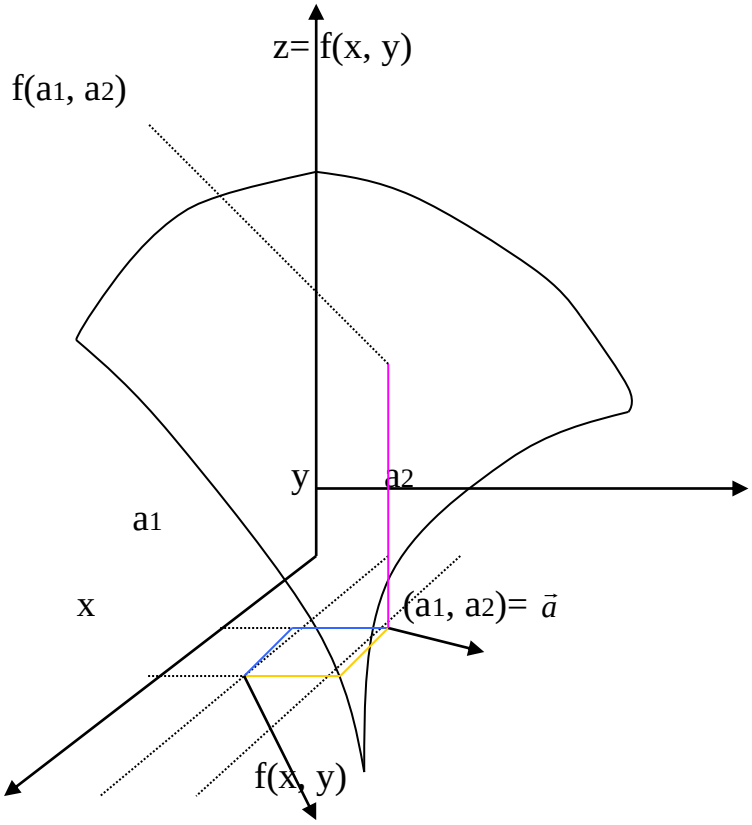
Fig. 13





(fig.14) in 3-D talk about vectors instead of x= ctnt:
$\vec{a}$ = (a1, a2). Regardless of the path 1 and 2 should produce the same result.

Fig. 14



where the blue line represents the path 1 and the yellow one the path 2

Way 1: $\lim_{y \to a_2} [\lim_{x \to a_1} f(x,y)] = l_1$

Way *2*: $\lim_{x \to a_1} [\lim_{y \to a_2} f(x,y)] = l_2$

And if you care, $l_1 \neq l_2$ means that $\lim_{(x,y) \to \vec{a}} f(x,y)$ does not exist

whereas if $l_1 = l_2$ may be or not.

When two beings look at each other in the presence of an obstacle in between, see part of being 1 without he notices it notices, while the being 2 sees a part of me without I notices it

Attention to what is meant by derivative operation is a calculation of pending at one point, while the integral operator (Riemann. ..) what it does is calculate areas.

Definitions of derived in 3-D:*:*

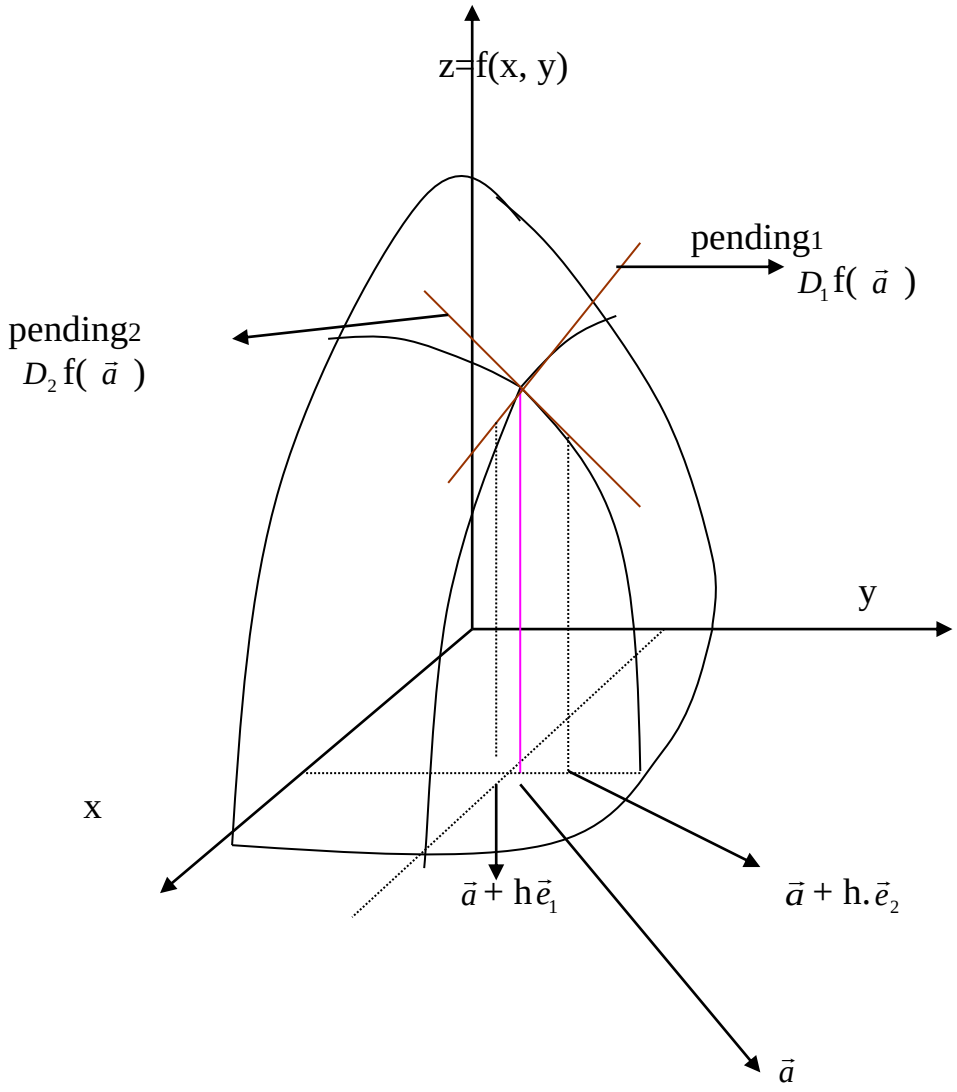
$\lim_{h \to 0} [f(\vec{a} + h.\vec{e}_k) - f(\vec{a})]/h = Dk\, f(\vec{a})$ where

accoding to fig.15,

k= 1,.2,..,.n

and n=2.

Fig. 15



Where $\vec{a}$ = (a1, a2)

Therefore, the slope is: D_1 f($\vec{a}$) and D_2 f($\vec{a}$)

And is represented as: ∂ f($\vec{a}$)/ ∂x and ∂ f($\vec{a}$)/∂y

"I want it all" does not become any rule as soon as I get tired and lose awareness of how the relaxation and time out is ; quiet waters

Cocaine: alkaloid (protein) in basic form (without H^+ ions) is soluble in alcohol, ether, but insoluble in water.

Extract from plants

joined with other terminations "-ine"
Such as alanine, codeine…

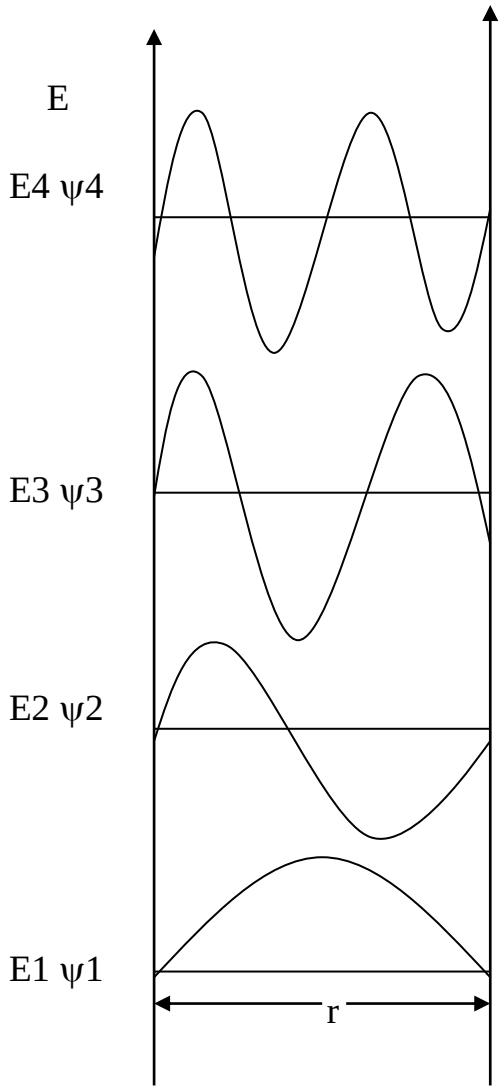
Product Weight net / Gross weight ⟶ % amount of the total product

Find the sense to this numerical subject:

3·3= 9 16-9= 7, 25-16= 9, 36-25= 11, 49-36= 13, etc...
4·4= 16
5·5= 25
6·6= 36
7·7= 49
...

In a **sounding box** there are particles closed and *quantificadly* they make waves (Fig.12).

Fig. 12:



The contact points of the waves with the x-axis (distance "l") are the nodes, and there are n-1 (where n is the main quantum number).

The wave propagated overlap and form small waves or mountains formed by interactions formed between waves (they are spreading throughout the paper.)

The metric decimal system was born in France.

Bolzano's theorem: in the snippet of "x" between (a, b) if f(a)>0 and then there is an intersection point where f(c)=0.

Ants can hold up to 7 times its own weight.

Hypertension may be too much tension that can arise in cells with a lot of pressure, and liquid to download (this is why we sweat)

To maintain balance in one solar system we need about planets remain united through the power of attraction of the greater in front of the younger. Besides the sun as the center of the Via Lactea also contains drafts.

The power of a mobile phone lasts for about 2 years. In head, because their electromagnetic radiations, occur a bad attack against the poor neurons and produce a disturbance and poor potential movement of neurotransmitter: different ion charges.

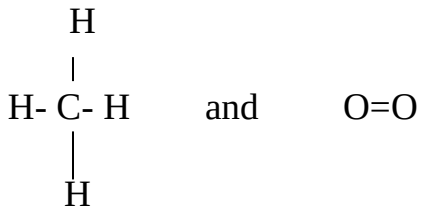
Locomotor system: has its greatest handicap the lactic acid which causes crystallization of it in practicing sport and react with
dilating, create voids or empty spaces.

Ozone: In the lower atmosphere this molecule is harmful because it irritates the lungs and decrease their ability to consume and destroy bacteria. On the other hand is a great oxidant powerful and helps to destroy microbes, ozone concentrations in summer can rise to dangerous amounts due to the action of solar light on nitrogen dioxide emitted by exhaust pipes Other ways to produce ozone as a disinfectant is expose air to ultraviolet light. At the top of the atmosphere ozone itself decays due to PVC and UV rays to penetrate and not leave the altmòsfera (ozone is a kind of shield)

$$O3 \xrightarrow{(CH)_n} n(C\text{-}H) + CO_2$$

$$|E_{C=O}| > |E_{O=O}| + |E_{C-H}|$$

Ex:

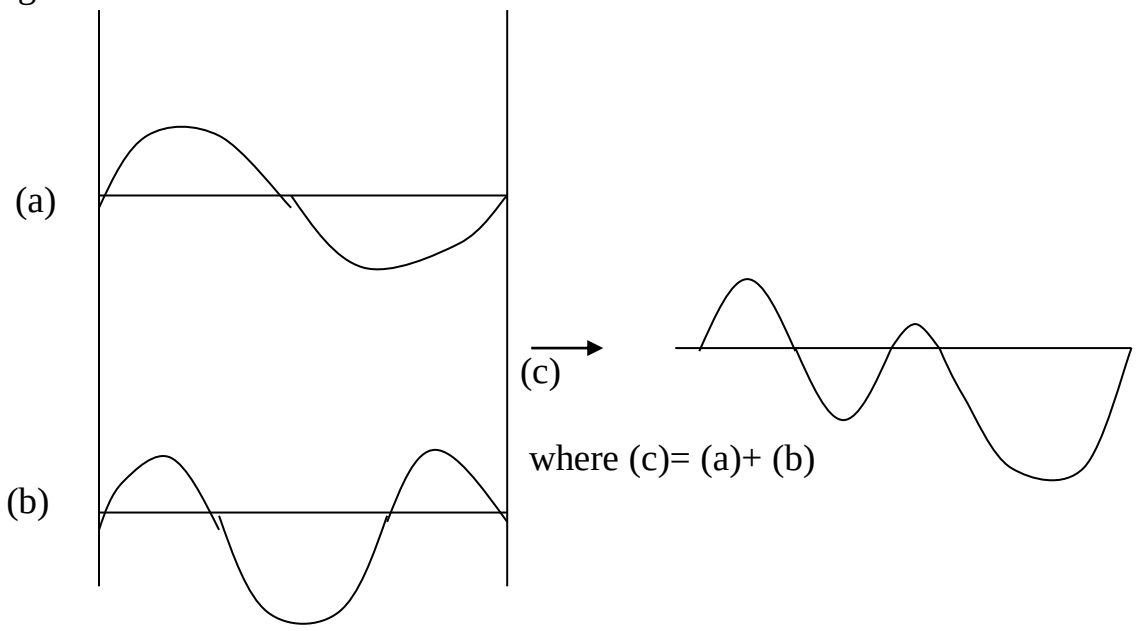


and O=O

$$4\,|E_{C-H}| + |E_{O=O}| - 2\,|E_{C=O}| < 0$$

fig.16: *distortion of sound waves*: it produces a superposition waves (phase and drift).

Fig. 16:



The sun protection cream prevents certain λ enter or penetrate the skin.

The pumping of blood veins and arteries to give heat and has to fight against the pressure environment.

The increasing of circulation makes also irrigating increases and makes the heart go faster; when the weather is hot, pumps less blood (and does not need because of the external heat).

The truth is concentrated in specific areas and isolated from the rest.

a= dv/dt → $v = v_0 + a.t$

$s = s_0 + v.t$

quan al moviment angular: $\omega = d\varphi/dt$

ω= rad /sg

α= rad /sg^2

i les relacions: $v = \omega . R$ o $\alpha = \omega^2 . R$

Eye drops: if you become granitic and contracts or concentrate your atoms so far lossy and disgregated through atmosphere and within other bodies where you have confidence, then, perhaps, the drafting of powerful cars and trucks will not cause you so much uncomfortable facts straight.

Specific gravity of an alleged substance is the weight that has a unit volume %= $(P_{isotope}/P_{total}) \times 100$ → is the higher among them. The weight which exhibited the highest isotope within the % of most of them.

Static electricity when the water or clouds load themselves with a great quantity of ions and these begin to impact and interact each other until find a lightning conductor.

The importance of the error.

When the ends join together and based on the rest who believes he has done the work that had to be considered finished there was a feeling similar to mortality. The mind can be rated as the potential that it possess or try to potenciate it.

When we move to such a different environment we just acquire their habits. If it is not much to ask I advise change a little “coldness” for the benefit of intelligence and sensibility [that is not subject to many surprises or being the center to overcome fears.

Speaking of the power of words is as painful for many, and is the only mean of communication (I mean ignorance and anger that this entails).

Maybe you do not use more than a low % of our mind, but there are neural connections that play in favor of communication, body metabolism, physical development... not only in favor of the intellectual capacity or memory or intuitive learning or life).

Apart from that we learn orally, is good to consider the message subliminal that "drip".

It is also interesting to interact with devices that man has Created and their supplies (radio, stereo, TV ...) that are so popular

Attention: we have a piece of cloth and we divide into 3 people. At the first one corresponds half of it, at the second a quarter of the rest, and to the last one, one-eighth of the remaining (which is 4 meters). Which is the actual length of the piece?.

Magnetic induction: carrier stream of nylon jerseys and the currents or charge movements of our the jersey in the form of jumps along the short distances which are located.

The Nobel is a tobacco to smoke individually, as the prize for which it has been created. The automatic gears for cars designed to make long journeys. *Engine elongation*. While “battle” cars of media technology (esportive. ..) in the media paths have in the gears their ally.

Hôpital rule: derive the numerator and denominator separatedly to arrange and discover the value of a limit.

these terms are confusing: MCM is the number that divided for each of them gives positive integer (the minimum number divisible by all of them). Whereas MCD consist in breaking in *nº's first* and then take them on the maximum exponent.

Western *homeopathic medicine* is different from the East one; the latter is based on the study of the parties concerning the global while the West is based on micro and specific aspect isolated from the rest.

Ex: feet and their relationship with other parts of the body. Proper therapy can troubleshoot chiropody, column, extremity pain, correct operation of kidneys, blindness, and absorption of E or with respect to brain potential brain (due to neurotransmitters that do communicating in just short distances)

Pasteur: procedure for the preservation of food; it consists in warming them to Tº C's variables. It is softer than *sterilization* (and for a time "x"). Thus, forms pathogenic, germs…are destroyed without killing everything else (beneficial microorganisms (ie: act selectively).
By not being sterilized, pasteurized foods must be kept cold. It is pasteurized wine, beer, fruit juices, and especially milk.

If you stop breathing in your nose and passes it to your mouth, ie. direct via to your stomach, and it grows at the expense of lungs, which, in theory, should work more (then people complain that they have not developed their thorax and form plugs in the lungs)

.

If a *Thermometer* indicates that before 100ºC the liquid boiles (vanishing or evaporating molecules).

This depends on the impurities that cause the molecules not attached as it should.

Empiricist and rational ≠ scientific and anatomical.

In principle empiricism is based on the outside of the home, while that doctors and anatomical or scientists contain internal body and thus, scientists explain their development and regeneration as doctors explain the symptoms and metabolisms.

Smoking includes combustion air, then the man needs more or oxygen in order to survive and create the intern combustions of own internal metabolism. Smoking more quickly in the field of development and therefore accelerates the burning of neurons and the asertivity or the intellectual awakening of the intellect.

$P_{atmospheric}$ below the water (a sort of tubular weight); the air inside the lungs also help avoiding the cracked body; which is a pretty strength towards the surface.

Even sneezes also spits liquid or body fluids. The railway will expand in summer, therefore, to avoid minimal but significant "tectonic plates" are separated a few centimeters:

Leaves of desert plants have not large surfaces area but are presented in the form of needles or spines have its reasons; itprevent water loss and that the animals eat them

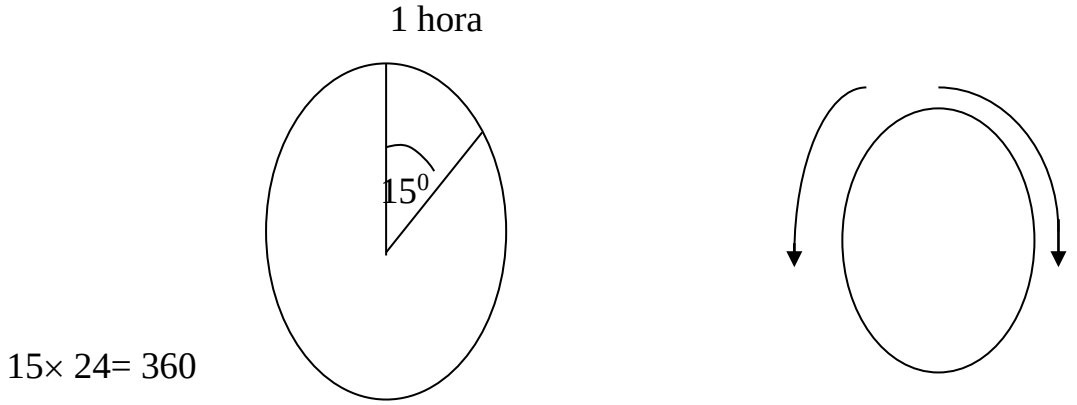
Optical Plans: these measures somehow the geometry status and their activity or mood to a guidance //if it is racemic mixture do not moves, but if it is optically active directed towards another direction. Somehow dependent steric problems that cause isomers are more quantified in a way that in the other//.

The static electricity that is generated outside the car thanks to the internal, which disappears when strip that disappears when a strip contact with the ground. The car becomes a kind of area where inside lays the charge and outside the neutralization therefore, in order to balance the formation of q, q external must be eliminated

Many modern technologies are based on nature and have similarities with animal or vegetables. For example: when someone is thrown in paraglider or parachute seem seeds moving freely in the air.

The plane was faster than the earth and left until it reaches point [backward, or, depending on the direction, forward].

Fig. 17:



As air travel, if you do it in the sense of earth rotation do not spend as many hours as if you do the opposite.

Gravity takes importance when we use the body to turns on us because we lose stability. In addition, if sometimes we turn in the same direction of the earth, we lose notion of weight and gravity makes us fall as a lead. Rigid body has to do with the reduced mass and gravity

Triangle de Tartàglia. (Pascal's triangle).

1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
1 5 10 10 5 1
etc...

The parable which is a function, has a sum of variables that make it more open or closed. +b'. When the aperture function grows is that a' becomes larger, and when closes means that a' becomes smaller. About b ', is intended to raise or lower the parable along the Y axis's.

There are things worth living or suffer (between one and the other has a top speed).