Null Spaces.
Kernels.

Definition of Null Space: The linear transformation $T{:}E_1 \to E_2$, is represented by the polytope $Ax \leq b$ where the Null Space is a SubSpace. (associativity, distributivity, commutativity, element with no inner product, singularity of inverse). If x is a solution of $Ax \leq b$, in these x's we have a Null Space. This Sub Space contains a Polytope (Covering). This Null Space is as $Ax = 0$, implying $E_1(\text{Null}) \subset E_2$. Here $A : E_1 \to E_2$. The Range is also a Sub Space (Column Space of A). The A has a Codomain as Surjective. The Projections $\wp$ on S_1 and S_2 are like: $\wp(S_1) \subset \wp(S_2)$ once S_i is given as Sub Spaces and we have a Null Space into S_1.(associativity, distributivity, commutativity, element with no inner product, singularity of inverse).

Dissolvement of Commerce: $H \subset X$, if $0 \not\subseteq H \to \exists$ unique f on X such that $H = \{x : f(x) = 1\}$ (the use of Total).

Continuity in Discussion: $\exists f$ non zero linear functional on X, Then $H = \{x : f(x) = c\} \forall c. \Leftrightarrow f$ continuous (Swiss Pharmacy)

Probe of Work in Cluj: the hahn Banach Theorem: $\exists K$ with an interior point, $\exists x_0 \notin \overline{K} \to \exists \pi(x_0) \in K$.

Connectedness of Spaces (mainly in Business).

$\langle A, \rho \rangle \subset \langle M, \rho \rangle$, then $\neg\exists A_1, \neg\exists A_2$ such that $A = A_1 \cup A_2, \overline{A_1} \cap A_2 = 0, A_1 \cap \overline{A_2} = 0$, A is connected. If $A \subset \mathbb{R}$ connected$\Leftrightarrow$ $a, b \in A, a < b$, $\exists c \in A$ such that $a < c < b$. If f is continuous on A connected, $f : A \to B$, then B is connected.

If f is *continuous* on $I = [a;b]$ then $\forall c,\ a < c < b$ and $f(c)$ exists $\forall c$.

$A_1 \& A_2$ are *connected*, and $\subset M$, $A_1 \cap A_2 \neq 0$ then $A_1 \cup A_2$ is connected.

We know A_k covers A, $A = \bigcup_{k=1}^{\infty} A_k$. If $diam A_k < \epsilon$ then A is *totally bounded* as $n < \infty$.

Regularly bounded : $\forall x, y \in A, \rho(x, y) < L$. If $\exists y$ such that $\rho(x, y) < \epsilon, \forall x,$ then the set $x, y \in A$ is dense.

If $A \subset M$, A *totally bounded*, then $x_i \in A$ has a Cauchy subsequence.

If $x_i? \to ?x_\infty$, and is a Cauchy sequence then $x_\infty \in M$.

If M complete and $A \subset B$, A Open, then A Complete.

For Compactedness: M complete and *totally* bounded. If $x_i \in M$, has a convergent subsequence in M, then it is compact. (If A closed then compact).

For the Heine Borel Property: A a subsequence of coverings is finite (in M)$\Leftrightarrow$ M compact.

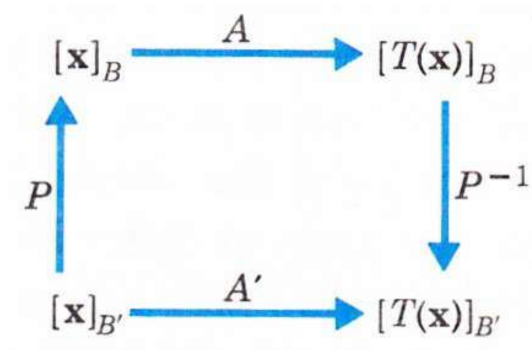
$f : \left| \begin{array}{c} A \\ M_1 \end{array} \right| \to \left| \begin{array}{c} B \\ M_2 \end{array} \right|, \quad \left| \begin{array}{c} A \\ M_1 \end{array} \right|$ compact, f continuous $\to B$ compact, with $f(A)$ compact in B.

$f : A \to B$, continuous, A closed bounded, $A, B \subset \mathbb{R}$, then $\exists \beta$ with $f < \beta$ on A. (has a maximum)

f injective (1-1), continuous , $f : A \to B$, A compact, f^{-1} continuous, has f as homeomorphism.

The Rollé Procedure: f continuous on closed and bounded $[a;b]$, and $f(a) = f(b) = 0$, then $\exists c$, $a < c < b$ such that $f(c) = 0$.

The **Worker uses the User Interface**, to compare patterns from the Chamber of Commerce for conditions. The Thread is a One variable Calculus Progression.(the Correction is thorough as Operative EigenSpaces for Interface). These Threads, like functionals is from Basis to Basis as Matrix Eigen-Interpretation: $A' = P^{-1}AP$ with $P \perp P^{-1}$. The Eigen-Space is a Role.



The Resuming Hysteresis New Activity are Sheares.

The **Sector** and $\langle r, \vartheta \rangle$ leads to *Public Transports* $\frac{\partial f}{\partial r}$. *Retail* $\frac{\partial f}{\partial \vartheta}$. *Agriculture* $\langle r\cos\vartheta, r\sin\vartheta \rangle$. *Finance*: Die Epizykloide: $(x,y) \to \left((a+b)\cos\vartheta - b\cos\left(\frac{a+b}{b}\vartheta\right), (a+b)\sin\vartheta - b\sin\left(\frac{a+b}{b}\vartheta\right)\right),\ 0 \leq \vartheta \leq 2\pi$, *Colonialism* Multivoque $f \to f' \to f \to f'$.. determinism and use of transcendent functions. *Edition* as Circle and Cardioid. *Medecine* as Cluster. *Justice* as Bayes' Evidences. *Entretien as Evolutionary Strategy* from Genetic Calculation. *Artificial Intelligence* is supplementar with **Micro Processor** leading to **Credibility from Montréal**. (Économie de Marché known from majoration and WeierstraB Result). The **Business Community** defines conectedness as $\exists c,\ a < c < b$ to find M in Market for x in Domain in $\mathbb{R}$ such that $f(x) < M$. The frame $m < f(x) < M$ is originally set in Canada, and monotonuous $x_i < x_{i+1}$ and $f(x_i) < f(x_{i+1})$.

Proposal of Occupational Sequence.

$f \in C[I]$ bounded and closed, then $\exists M$ such that $f(x) < M$.

$f \in C[I]$ increasing then $\exists f^{-1} \in C[I]$ increasing. If $f : A \to B, X \subset B, Y \subset B$ then $f^{-1}(X \cup Y) = f^{-1}(X) \cup f^{-1}(Y)$ where X is called increment to Y and $f^{-1}(X \cap Y) = f^{-1}(X) \cap f^{-1}(Y)$. Relationship with Aleika is where Least Upper Bounds and Great Lower Bounds.

Rollé then $\exists c$, in $f(c) = 0,\ a < c < b$ and connectedness.

$f \in C[I]$ closed and bounded,$\exists c \in I$ with $f(c) = M = m$. The case of Aleika.

Piecewise continuity comes as with lower or upper continuity.

Uniform Continuity and Business Problems for solved majoration: for I **closed and bounded candidate**, $\forall \epsilon > 0, \exists \delta > 0$, such that $|f(x_1) - f(x_2)| < \epsilon \to |x_1 - x_2| < \delta, x_1, x_2 \in I$. At this point we speak of sequence $S : \mathbb{N} \to \mathbb{R}$ is converging if $\exists$ bound M and m. If $S_n \upharpoonleft$ is incresing and $\exists M$ then convergent. Clearly $\sum_{n=1}^{\infty} S_n$ is wanted convergent if no investment in business is done. They are non negative terms and there is no viable new product to sell.

Also non alternating. $\sum_{n=1}^{\infty}[S_n]^2 < \infty$ and new product lead to $u \cdot v \leq \|u\|\|v\|$ Schwartz and Minkovsky $\|u+v\| \leq \|u\| + \|v\|$. The Triangle Inequality is $\rho(x,y) \leq \rho(x,z) + \rho(z,y)$ and

$$l^{\infty} : \exists\rho(x,y) = lub_{n\in\mathbb{N}}|x_n - y_n|$$

If M is complete and $A \subset B$, A Open then A Complete. A Complete and if *Totally Bounded* then Compact. (If A closed then Compact). As there would be a sub-sequence in A then A Compact.

f injective (1-1: $f(a) = f(b) \rightarrow a = b$), $C[a;b], f : A \rightarrow B, A$ Compact, then $f^{-1} \in C[a‘b]$

The Normed Linear Space was introduced as by a constrained linear functional determining a Dual Space. As an example: $l : X \rightarrow \mathbb{R}$, where X is known as an Original Space $\forall l \in X^*$ a new Space. There are a sequence of l_i as $l_i \in l^2 = \sum_{n=1}^{\infty}[S_n]^2 < \infty$.

Design on How the Guide sees the Tourist Probe as Many.

The generalization of the mean value principle will be presented. We assume we have the path: $(x,y) \rightarrow (g(t),h(t))$ from (x_0,y_0) and (x_1,y_1). We have the secant line through these two points must be parallel to the tangent line at some in-between point. If the line is not vertical, then the slope is: $\frac{y_1-y_0}{x_1-x_0}$. h and g are continuos on $[a,b]$, then $\frac{h(b)-h(a)}{g(b)-g(a)} = \frac{h'(T)}{g'(T)}$ where $T \in (a,b)$.

Parametrization is free of theory with Germanity.

If we assume that $x \rightarrow y(x)$, we let $h(x)$ be the error $E(x)$ in the tangent line approximation, namely $E(x) = y(x) - y(a) - y'(a)(x-a)$, where $E(a)$ and $E'(a)$ are both zero, and $E''(x) = y''(x)$, and $g(x) = (x-a)^2$, then $g(a)$ and $g'(a)$ are both zero, then

$$\frac{E(x)}{(x-a)^2} = \frac{E'(y)}{2(y-a)} = \frac{E''(T)}{2} = \frac{y''(T)}{2} \text{ where } y \in (a,x) \text{ and } T \in (a,y)$$

If y is twice differentiable on I, containing the point a, $\forall x \in I$,
$E = y(x) - [y(a) - y'(a)(x-a)]$, and
$E = \frac{y''(T)}{2}(x-a)^2$ where $T \in (a,x)$

The Hôpital Rule is: $y(x) \rightarrow 0$, $g(x) \rightarrow 0$ as $x \rightarrow a$, and $\frac{y'(x)}{g'(x)} \rightarrow L \leq \infty$, as $x \rightarrow a$, then $\frac{y(x)}{g(x)} \rightarrow L \leq \infty$ as $x \rightarrow a$.

Venue is by Augmented Reality: $x_{\bullet i}$ in $AX = B$ is a solution to $\min CX - d$ subject to $AX + B, X \geq 0$. We call $x_{\bullet i}$ a feature of Venue.

Work is the dual of the Augmented Reality: $\max B^T U - d$ subject to $A^T U \leq C^T$, where $u_{\bullet i}$ is a feature of Work.

Space Time and Boundary Values: defined as i and *Range* at 1) segment $\otimes$segment and 2) $\mathbb{R}^{+-} \rightarrow \mathbb{R}^2$ (segment → Halfline). Said: (segment (espacio divisible) → Halfline (Time Continuity Segment segment→ComplemetnoSupplement→by Determination of Boundary Values.).

Determination (Bestimmung): Establish (Alqueria Alguliar). Negativity $b_i \rightarrow y_i$ is by Range and Negativity (Actualization of Substantive (Dependence Independence Equation)*(por n elegios entre los n^2, and so on.)*). Determination defined as: *suma de todos* *los productos posibles (formados* $n!$ *). (por n elegios entre los* n^2*, and so on.).*

Distinguer x_i de y_i →One Note. *Espacio:* $\mathbb{R}^n \to \mathbb{R}$. (Functional and Metric). **Hilbert** defined by: Inner Product Space that is Complete→Inner Product. The **Banach** Space is defined as: Metric by a Norm. (Functional). **Random Experiment**: (for a Sample Space) (*Espacio Muestral*) by a **Zone Franche**.