Geometry and Calculus of Numbers

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Calculus

The calculus of differentiations and integrations is centered around the notion of a curvalinear relationship given the manner in which functions may be expressed and so given in terms of their variants and variables as well as the functional values they take on and their integral and differential notions. As a consequence there are preliminary notions that concern us with that of the differences of such relations with interior and exterior variant considerations; inclusive of constant and non varying conditions; for the simple notion that is difference. Simply put; a given function may take on a variable or constant value; which suffices as enough proof that relationships of numbers to numbers are self relational in an least one capacity; in that they possess *value*; likely the only given we have aside from that of intermediary differential or integral relationships expressed in terms of summation and difference.

Considering the implications of the free group like result of mathematics from group theory and that of the relationship of algebra as a tool to understand that of their articulations of expression under open relations of sense and relation under pure terms for that of calculus of integral and differential form. The given 'free' property of group elements when considered that differential and integral relations may be extended to higher order relationships on variables without free number closure relation; and that of the self definitional nature of it's elements; given the following structure of inquiry and their definitions holds:

$$\partial g(z)f(z) \rightarrow \partial gf + g\partial f \tag{1}$$

This first equation expresses the so known 'chain' rule of differential calculus; usually given robust proofs of potentially unenumerable or enumerable number. It is plainly put and seen as a mapping of $z \rightarrow z$ by the chain rule for the exterior relation that is a variable to that of an integral or differential notion of an exclusively interior and not exclusively exterior relation and nature by the variable z as the given. This is to mean in a sense that the differential and integral relations amount to variables; and yet this is true; so also it is true that variables are the constitutive elements of their relations; with their 'connecting' relationships given by abstraction set aside:

$$\frac{\partial g}{f} + \frac{\partial f}{\partial g} = 0 \tag{2}$$

As a given then this equation embodies the partial relation of an apportionment to an amount of the given function g in relation to it's ratio and rational fractional difference to that of the partial differential of the given function per the other non conjugate relationship. The open result of zero determinant is a consequence of the variance of the subsidiary relation of a given function's first differential defined in relation to that of any such secondary in singular given under dependence as equivalent to zero by that of their common containment of relation under prefix by z. It is that therefore hence follows the partial differential relations (with a passive differential chain rule presumed) lead to that of the 'arbitrary' variable of μ in relation to that of a common self automorphism:

$$\frac{\partial f}{f} \int \frac{\partial g}{g} = fg \to \partial_\mu \log(fg) \tag{3}$$

Hence as two functions defined in terms of each other it holds that as a consequence; two suppositions of new nature are found which relate to that of two separable open relations of integral formulation under the given relationships to be found between that of the suppressed variable z; and that of the function g, as for their open interior relation of self similarity under inversion, square root and logarithmic nature. This separates the meanings of the indical functions of g and f as dependent on the variable z in a manner in which it is possible to shift the relation passively between and within that of reductive 'inversion' of a function over $f = z$ and that of the function being defined openly in relation to an other (one singular non-variable (z) function.

The conventional relations of variant calculus as in differential form are:

$$\frac{\partial y}{\partial x} = -\frac{\partial x}{\partial y} \tag{4}$$

And:

$$\frac{\partial x}{\partial x} = \frac{\partial y}{\partial y} \tag{5}$$

As the square differentiable exterior relation of the four fold independent interior relation.

It then holds that a center of mathematics may only be defined by that of an exterior relation passing inwards; In relation to the given integral to differential relationship of 'involute' $\&$ 'evolute' functions of two natures; given by that of either sense of conformality in any dimension (given the exception of neither function nor variant) and additionally under a common mapping of sense given by reduction to zero under radical inverse and forward mapping of open 'evolute' of interior 'involute' in relation to a center. It is defined then that the integral of the partial differential of the logarithm is self similar under reduction to either of the given function's of square root radical and of integral and partial differential when expressed as complete integrals of each other's reduction to preliminary notions of the self definitionality of variables of dependence and independence; under reduction to either self inversion under hypergeometric interior limit in relation to permutations of these operations as transparently a union of common group order not of variance but of variant; hence locating a centerless center within mathematics for the open limits definitional of all commonalities of functions and such subsidiary variables; under their shared property of *interchangability*. Mathematics under any other given sense would be incomplete; so this holds as a given.

$$\left.\begin{aligned} f &= \int \partial g \\ g &= \int \partial f \end{aligned}\right\} = g(z) = \int_z \partial \log(f(z)) \tag{6}$$

Therefore that of the open quotient of free radical relation is closed within that of the given functional log argument of the Legendre equations; given the open free relation of closed evolute exterior relation.

The integration over z is a consequence of the fact that this need be a dependent variable; but here it is in no sense of the meaning to be exclusively a singular relation; and instead that of an open relation of ‘passive’ integration over that of the ‘evolute’ and ‘’involute’ of curvature of the two natures of function so understood with the former as ‘active’ as is always true. While here it is not made in the same sense to mean that these are different notions of integral; they are each different natures of limitation and limitlessness of integration and differentiation. As a consequence the second nature of inclusion of functional relation is that of integration when seen as by a given function; in relation to that of a argument for which the end function is openly determined through that of the differentiation and the resultant integration. Either of these are then inclusive in their relation to that of the definition. So, separably it is given that:

$$f(z) = \int_g \partial g(f(z)^{-1}) \tag{7}$$

This dependence is symbolic in a lesser sense of simple set theory; and yet is quite literal in the location of a displacement free center of mathematics. These equations then do lead to an open relation of the given that the differential and integral are related and similar under application to either to or from its dual self inverse as reversal or that of forward application under integration or differentiation to that of each such other in singular or general enumeration under secondary harmonic relation; (this holds naturally in conventional calculus and analysis):

$$\partial g(z) = \int f(z) \tag{8}$$

The generating relationships of that of integration over z and that of the logarithmic functional dependence of that of a given function $f(z)$ on z and that of the open relationship under inversion of the same function as for which the function g is integrated over; with g in relation to the integral variable defines the self same function f of z as a consequence of the notion of difference between derivative and differential; for which one is of rectilinear relationship and one of which is of curvalinear relationship; the result of which is an inclusion of uncional means with measure of differential functional dependence.

$$\partial f(g(z)) = \int g(f(z)) df(g(z)^{-1}) \tag{9}$$

The simple meaning of this equation is that open interior relationships under inversion is exterior inverse relation under exterior integral relation of functional differential. Moving forward the direct application of inference is therefore expressed as with the equations:

$$z \to f, z \to f \tag{10}$$

Therefore, as a consequence closure is obtained as a result of the inclusion of their interior functional relationship through that differentiation, integration, and that of mutual involute dependence for that of exterior and interior evolute dependencies of given relation so aforementioned. Thus the self involute and evolute functional relations are defined in accompaniment of equivalent senses of harmony of harmonic functions pointwise in terms of each other by the following relationship:

$$f(g(z)) = g(f(z)) \tag{11}$$

Although, this is not to be misunderstood as entire. Thus the given functional differential integral relation is easily determinable as an equivalence of that of the functional relationship of the functions f and g as follows (and as is known); by the prior suppression of the function f in the equation with derivative of the function f. As a consequence it is knowable that the functional relationship of harmonicity is uniquely extensible to functions of infinite order. The relation of that of the prominent function $f(z)$ is different in kind; for it is the defined; while the former is definitional in that of either the displacement free or displacement fixed definitions so alliterated here:

$$f(z) = \partial \int g(z) = \int \partial f(z) \tag{12}$$

This (exceptional) free relation is a given as the inseparability of given common function character idempotency.

Finally; as a consequence; that of the separability of functions and their dependent variable spaces is accomplished by a seamless passing of notion of differential with dependence on exterior functional relation within that of interior notion of differential product relation; for that of which is an 'additional' variant contribution of a surplus 'rate' of accrual of differential by either limit between each of displacive notions of functional variant; owing due to the *differential* relation to the *derivative* as being different in the sense of dependence of variance. Therefore that of the given open relationship of the following is determined as the correct direct consequence:

$$\partial g = \partial f + g \partial f = g(f(z)) \tag{13}$$

Hence the given relations hold:

$$\oint x - y\frac{dy}{dx}dx = 0 \tag{14}$$

$$\oint y - x\frac{dx}{dy}dy = 0 \tag{15}$$

As either asymptote in an independent system is self inclusive as a given; and by PicardâĂŹs lemma every introductory limit possesses an enclosing domain of finite differentiability to integral condition of finite to infinite limit of any given arbitrary order; hence the limitation of the definability of a polynomial group of arbitrary limit; yet of finite value.

Therefore the limitation of a normalized distribution by arbitrary third order derivational sequential prior limit of definition for therefore that of the excess measure of that of any arbitrary polynomial of ordered relation is intermediate is maximum or minimum of limit of relation of specificity.

Then it is found that no such other simplicial maximal degree quotient of prior relation is so limited by measure in excess by that of any such fourth order relation as that of either is so chosen ab initio; a given for the sake of a commonly (or uncommonly) divided zero.

No such direct derivative and the inclusion of functional is for the same reason of inclusion of measure. The $g(f(z))$ deserves mention as an inclusive relation not merely of notation; but literally; as a consequence of the second differential (harmonic) condition being transparent to that of the differential notions and compatible with the separability of either functional relation; under harmonic independence of any two subsidiary and intermediate functions. As a consequence of each given prior open relationship of integral to differential structure that of the order of operations is known as either invertible or non invertible in this sense; and as related to the specific relation:

$$z = \partial \log(\frac{g(z)}{f}) \cdot \int f(z) \frac{\partial g}{g} dz \tag{16}$$

Expressing the fractional delimitory nature of interior free relation of forward onto mapping. $z \to z$

This free (and open) relation holds by the irreflexive (empty) relation by the given property of open exterior; hence it's provability is known as:

$$g(dz) = dz(f) \tag{17}$$

This relation; in one equation; as valid as can be seen by motion of these functions through in reverse is no more complex than it appears; for it expresses the free relation of logarithm to differential to integral within calculus; defining the function z and the variable z by the same means for that of which a function may take on the value of it's own variable.

The neccessity of this relation is as simple as:

$$\oint xdy = 0 \tag{18}$$

Taken in whole, that of the given difference between the covariant and equivalent monovalent foliation under approach or recession from an orbit of a function; that of the given point like relation of a circle interior to a given four relation of pointwise limit collapses to an irreducible null relation within that of the square union of summations.

Satisfiability

The natural relation which imports proof into this relation is the relaxation of alternatives of coparallel and parallel in relation to open indivisibility of either of differentiation or integration under separable and conjoint relationships with that of a function under supression of interval in relation to interval of normalized function; hence for that of their logarithmic rate of strict independence and dependence as subtractive a coparallelism of two complete infinitesimal curvalinear relations are freely weight apportioned in relation to the absolute invariant of variable (z).