EQUATION, IDENTITIES, EQUIVALENT EQUATION, EQUATION WITH ONE UNKNOWN OF THE FIRST ORDER, FRACTIONAL RATIONAL EQUATIONS AND THEIR SOLUTION

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Annotation: This article is considered to be an article with full information about high-level equations and various equations. Article writing is carried out in accordance with the procedure and given the necessary examples.

Key words: system of differential equations, system is referred, Order differential equations

Introduction

If the question of finding not one unknown function, but several unknown functions in one lump, is put, then in general, the issue is limited terms-equations, too, it will be necessary to have several. If the equations of matter consist of differential equations, then we can talk about a system of differential equations.

If the order of the derivative in each equation of the system does not exceed 1, the system is referred to as a system of bi-rank differential equations. A system of two first order differential equations with two unknown functions, usually,

$$\varphi(x, y_1, y_2, dy_1/dx; dy_2/dx) = 0$$
$$\varphi(x, y_1, y_2, dy_1/dx; dy_2/dx) = 0 \quad (4)$$

The laying of the Koshi issue for an equation is naturally summarized for a system of differential equations. For example, (4) the issue of Koshi for system is a beginning

$$y_1(x_0) = y_1^0, y_2(x_0) = y_2^0$$

Any higher order differential equation or system of equations can be brought to the system of First Order differential equations.

Equation-a mathematical equation that indicates the interrelation of two or more expressions. From equations it is used in all theoretical and practical fields of mathematics, as well as in physics, biology and other social sciences.

This is the first time that the equality sign is used (14 xs+15=71). From Robert record's book" The Witte Lightning "("the Whetstone of Witte") (1557).

In the equation there will be one or more unknown values and they will be called variables or unknowns. Unknowns are usually denoted by letters or other signs.

Equations are named according to the number of variables in them. For example, one variable equation, two variable equation, etc.

Differential equations are equations in which unknown functions, their different ordinal derivatives and variables are involved. In these equations, the unknown function is defined by means of i, in the first two i is the relation of one masculine variable to t, and in the latter to X, t and x, u, z, respectively. The theory of differential equations began to develop simultaneously with the emergence of a differential and integral calculus at the end of the 17th century. The

differential equation is of great importance in mathematics, especially in its applications. Examination of various issues of Physics, Mechanics, economy, technique and other spheres leads to the solution of the differential equation. 2. A special derivative differential equation is an important feature of these equations that differs from a simple differential equation in that the sum of all their solutions, that is, the "total solution", depends not on the optional variables, but on the optional functions; in general, the number of these optional functions is equal to the order of the differential equation; and the number of their Solving an unknown 1-order private derivative Differential Equation leads to the solution of a simple differential equation system. In the theory of a private derivative differential equation in which the order is suddenly higher, various boundary issues in a cathode with the Koshi issue are checked.

In the vast majority of cases, several functions may be required to describe a single process or event. This results in multiple differential equations that form functions system. Such a system is called a system of differential equations. Depending on the order of the yield, this system can be a system of first, second and N - th order equations. T argument in solving many issues, unknown x1, x2, ..., X1=x1(t), x2=x2(t), which satisfies the system of differential equations containing xn functions and their derivatives ..., xn=xn (t) required to find functions.

Materials And Methods

If each equation of the system is a first-order differential equation and has a first-order (linear) relation to the product, then such a system of N-ta nominal, n-ta differential equations is called a normal system and is written as follows.

$$\begin{cases} \dfrac{dx_1}{dt} = F_1(t, x_1, x_2, \ldots, x_n), \\ \dfrac{dx_2}{dt} = F_2(t, x_1, x_2, \ldots, x_n), \\ \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \\ \dfrac{dx_n}{dt} = F_n(t, x_1, x_2, \ldots, x_n), \end{cases}$$

The first order can be attributed to a system of N-ta differential equations, to a single differential equation with N-order. To do this, we support the method of eliminating the unknowns in a row. This method is carried out with a combination of differentiation and reduced series of unknowns. In fact, we distinguish one equation of N by x, for example, the first one.

$$\frac{d^2y_1}{dx^2} = \frac{\partial f_1}{\partial x} + \frac{\partial f_1}{\partial y_1}\cdot\frac{dy_1}{dx} + \frac{\partial f_1}{\partial y_2}\cdot\frac{dy_2}{dx} + \ldots + \frac{\partial f_1}{\partial y_n}\cdot\frac{dy_n}{dx},$$

or

$$\frac{d^2y_1}{dx^2} = \frac{\partial f_1}{\partial x} + \frac{\partial f_1}{\partial y_1}\cdot f_1 + \frac{\partial f_1}{\partial y_2}\cdot f_2 + \ldots + \frac{\partial f_1}{\partial y_n}\cdot f_n,$$

Rational equation is an equation made up of rational expressions. If f(x) and g(x) are rational expressions,

The equation is called a rational equation. The equation is called the whole equation, if f(x) and g(x) are whole expressions. If f(x), g(x) is a fractional expression of at least one of the expressions, then f(x)=g(x) is called a rational equation or a fractional equation. Linear, quadratic equations are whole equations.

e equation

which has four terms, and right-hand side , consisting of just one term. The names of the variables suggest that *x* and *y* are unknowns, and that *A*, *B*, and *C* are parameters, but this is normally fixed by the context (in some contexts, *y* may be a parameter, or *A*, *B*, and *C* may be ordinary variables).

Results And Discussions

An equation is analogous to a scale into which weights are placed. When equal weights of something (e.g., grain) are placed into the two pans, the two weights cause the scale to be in balance and are said to be equal. If a quantity of grain is removed from one pan of the balance, an equal amount of grain must be removed from the other pan to keep the scale in balance. More generally, an equation remains in balance if the same operation is performed on its both sides.

In Cartesian geometry, equations are used to describe geometric figures. As the equations that are considered, such as implicit equations or parametric equations, have infinitely many solutions, the objective is now different: instead of giving the solutions explicitly or counting them, which is impossible, one uses equations for studying properties of figures. This is the starting idea of algebraic geometry, an important area of mathematics.

Algebra studies two main families of equations: polynomial equations and, among them, the special case of linear equations. When there is only one variable, polynomial equations have

the form $P(x) = 0$, where P is a polynomial, and linear equations have the form $ax + b=0$, where a and b are parameters. To solve equations from either family, one uses algorithmic or geometric techniques that originate from linear algebra or mathematical analysis. Algebra also studies Diophantine equations where the coefficients and solutions are integers. The techniques used are different and come from number theory. These equations are difficult in general; one often searches just to find the existence or absence of a solution, and, if they exist, to count the number of solutions.

Differential equations are equations that involve one or more functions and their derivatives. They are *solved* by finding an expression for the function that does not involve derivatives. Differential equations are used to model processes that involve the rates of change of the variable, and are used in areas such as physics, chemistry, biology, and economics.

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