the general science journal

Author : PRADEEP KOSHY

Category : Research Papers

Sub-Category : Mathematics and Applied Mathematics ,

Algebra , Diophantine Equations

Language: English

Title : MIRACLE EQUATION-CAN BE USED TO SOLVE 3 VARIABLES IN A SINGLE EQUATION

Date Published : 27-11-14

Keyords : NumberTheory, Algebraic Identity , Theorem, SRT.

Abstract : Before 2015, you required 3 equations to solve 3 variables. Now it isn't necessary. Seems impossible , but here is the proof.

PROOF:

MIRACLE EQUATION-CAN BE USED TO SOLVE 3 VARIABLES IN A SINGLE EQUATION.

MIRACLE EQUATION:

$$[(NX)^2 - \{(N-2)X^2] = [N-(1-X^2)]^2 - [N-(1+X^2)]^2 = 4(N-1)X^2$$

The above three way related algebraic formulae or equation or Algebraic Identity which is true for all real or complex values of N and X , is actually analogous to the equation $[A^2-B^2]=C^2-D^2= E$ where $A = NX$, $B = (N-2) X$, $C = [N-(1-X^2)]$, $D=[N-(1+X^2)]$ & $E= 4(N-1)X^2$ where .A,B.C,D & E are five variables. One way of analyzing the same is, if anyone chooses one of these five variables , either A,B,C,D or E, the remaining 4 variables can be found out , by applying suitable values (by trial and error)to N and X , in the considered variable and the other variables turn out correspondingly to the same.

Viewed alternatively, $A^2 — B^2 = C^2 — D^2$.Suppose one chooses C=1174. In my convention $C= [N—(1—X^2)]$, I arbitrarily,choose X=15, therefore N=950,therefore D=724 , A=14250 and B=14220 . B, D and A could be found without calculators and that is mysterious. Even E can be found out. The second case or application is given below. Now ,there is an

interesting application wherein ,we can utilize this equation to solve 3 unknown variables in a single equation. Assuming the 3 variabled equation is of the form $ax + by + dz = k$ where a ,b ,d are coefficients and x , y , z are variables and k is the constant .

Solution is given by $x = A^2/a$, $y = B^2/(-b)$ and $z= D^2 /d$, since equaton is of the form

$A^2—B^2+D^2 = C^2$ Hence the solution to the equation $2x + 3y + 4z = 16$. Here C = 4 .

Arbitrarily selected values of N = 1 , X = 2 to satisfy $C=[N—(1—X^2)]$ Ergo , x = 2, y= - 4/3 and z = 4. Alternatively. let us substitute X as any rational number . X can

assume infinite values.(Albeit, if X is real ie for instance the irrational number case, we need not get exact solutions and might therefore get only approx. solutions). We could generate different values of $N = C + 1 - X^2$,corresponding to X equal any rational number. We can threreby, get infinite solutions to this equation, since the three variables are related to N and X only. We could resort to algorithm and programming at this stage, since a general equation is involved. Please note that $C = \sqrt{k}$. PN: When k is a perfect square , calculations are simple. Otherwise,multiply k by itself. For the equation to remain unchanged multiply each term of LHS by k and then resort to the steps like below

.Suppose one need to solve 2x+3y+4z=13. Taking the necessary steps, the equation becomes ie multiplying each term in the given equation by k = 13,it transforms into 26x+39y+52 z= 169,therefore $x= A^2/a$,$y= B^2/(-b)$ and $z= D^2 /d$. Here C= 13, If selected value of $X=2$, $N = k+1 - X^2=13+1- 4=10$. Therefore $x= 400/26=200/13$, $y=256/(-/39)$ and $z= 25/52$ Take another value of $X = 15$,then $N= k+1 - X^2= 13+1-225=$. -211, $A= NX= -3165$ $B= (N—2) X= -3195$ $D=[N—(1+X^2)] = -437$ $x= A^2/a= 385277.8846$,

$y= B^2/(-b)= -261744.2308$ and $z= D^2/d = 3672.480769$. Verification $26x+39y+52 z= 169$ $26(385277.8846)- 39(261744.2308)+52(3672.480769)=169$ (hence We can obtain infinite solutions to(x,y, z) for rational or real number solutions,but they need not be exact solutions,for set of irrational numbers. Suppose the equation is of the form $lx +my + nz = k$ where if $l = a$ then $x= A^2/a$,if otherwise $l = -a$ then $x= A^2/(-a)$ and if $m = b$ then

$y= B^2/(-b)$.otherwise if $m=-b$ then $y= B^2/(b)$ and finally if $n=+d$ then $z= D^2/d$,otherwise if $n=-d$ then $z= D^2/(-d)$.Hence x,y and z can attain all sets of values pertaining to real numbers ,where a,b,c,& $d>0$ .Hence,using a supercomputer or quantum computer a billion solutions can be obtained in a few minutes. The above equation can be treated as a Diophantine Equation,since integer and rational solutions of the same are exact.

Conclusion

The modified form of miracle equation is akin to special relativity equations brought to the standard form ie $(E =)Y^2 = A^2— B^2 = C^2—D^2$, equivalent to the altered time dilation equation $(t')^2=(t)^2—(tv/c)^2$ is in that form , hence if we are aware of merely the fixed value (t′).the remaining two variables are determinate ie t and tv/c,implies t and v could also be found out.I mean the numerical values they attain (these variables)ie the general solution can be determined.Also, in the time dilation equation all the variables ,have the same dimensions and units.

Finally, it (Miracle Equation) enhances the trinitarian concept.Well, the negative aspect of this article, someone could argue, one doesn't obtain all the solutions in one shot- but the general solution,which ofcourse is the larger and greater picture and the absolute necessity.

Reference

1 www..Stephen Wolfram Mathworld.com

2.Higher Algebra by Hall and Knight.