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The Seven Millenium Problems & AT Math

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Abstract
In this paper, we attempt to provide the solution for all 7 Millenium Problems put out by the Clay Mathematics Institute. In addition, we provide the solution to the Beal Conjecture, the Goldbach's Conjecture, and the underlying Pareto Principal foundation. The AT Math solution has been available in modern times since January 2016. It was known to ancient civilizations that this author has written about.

Keywords: Riemann Hypothesis; P vs NP; Hodge's Conjecture; Navier Stokes Solution; Yang -Mills; Birch Swinnerton Dyer; Poincare; Goldbach; Beal Conjecture; Pareto Principle.

Introduction

The relationship that indicates that 80% of the results come from 20% of the input is ubiquitous. It even is the underlying mathematics that forms the Cosmos. The reader should be aware by know of what I called AT Math. This is the math that relies on the mathematics that has the function equal to its derivative. In the case of the universe, it is energy and time that follow the Pareto Rule. To my knowledge, besides AT Math, the rule has not been treated to mathematical analysis. We provide that here.

$t=80\%=0.80$

$E=1/t=1/0.80=-1.25=E_{min} \Rightarrow$ GMP $t_{min}=1/2$

$t^2-t-1=E$
$(1/2)^2-(1/2)-1=-1.25$

$M=\text{Ln } t=E$

$dE/dt=1/t=2t-1$

$2t^2-t=0$
$t(2t-1)=0$

$t=0$: $1/2$ □$dE/dt=-t$ $y=-y'$

Eigen function
$t^2-t-1=2t-1$

Eigenvalue
$3^2-3-1=2(3)-1=5$
$t=3=c$; $E=5$

$E=e-t=e-3=1/20.0$
$E=1/t$
$1/20=1/0.80$
80% $\chi=20$
$\chi=25=5^2=c^2$
3-4-5 triangle
Pythagoras
$c^2=a^2+b^2$
$5^2=3^2+b^2$

$b^2=16$
$b=4=M=|D|$
$E=5=1/20\%$
$1/80\%=20\%$
$-1.25=1/5$
$E_{min}=1/E'=1/5$
$E'=1/E_{min}$
$E'=1/t_{min}=1/(1/2)=2$
$dE/dt=2t-1=E=2=d^2E/dt^2$

$2t=3$
$t=3/2=1.5=1/666=1/G$ $G=E' \Rightarrow$ Clairaut Equation
$d^2E/dt^2-G=0$
$d^2E/dt^2-E=0$
QED

Riemann Hypothesis

ζ is a complex function.
Recall $i=\sqrt{(-1)}=-0.618$

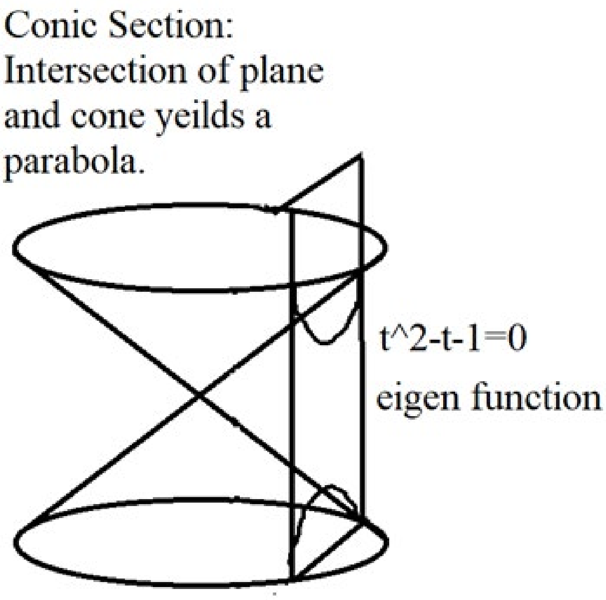


Figure 1: Conic Section Parabola

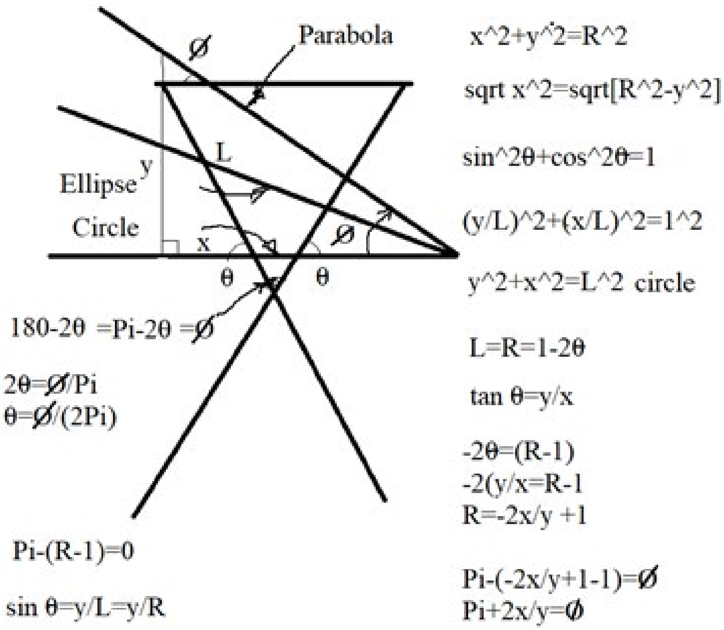


Figure 2: The Vector Cross Product for Energy -time plane

Elliptic curve 1 x 8 x22 =3LY x 24LY x 66 LY
Recall $u\bar{v}=12.84$

Bell Curve
$f(x)=1/\sqrt{(2\pi)}\ e^{-(x-\bar{x}/2\sigma)}$
$y=E=1/\sqrt{(2\pi)}\ e^{-t}$
$E=0.2419$

$E=e^{-0.2419}=0.78507\approx\pi/4=45° \Rightarrow y=y'$

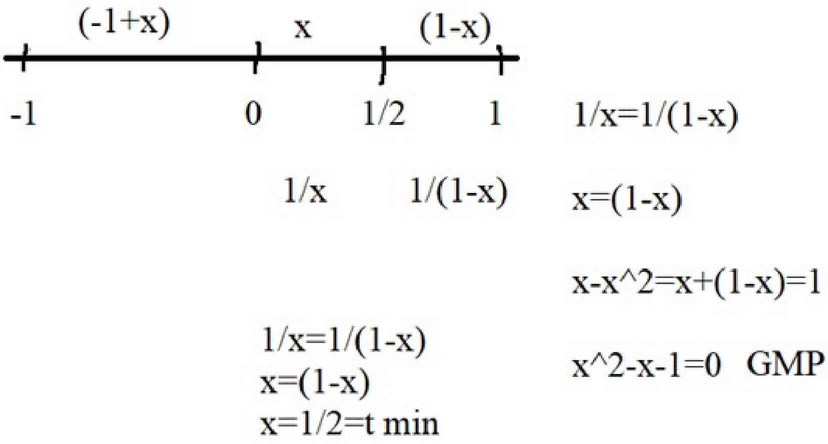


Figure 3: The Infinite Distance Problem

Distribution of Primes
$t^2-t-1=E$
$t=1/2$ $E=-1.25$ @ $\theta=60°$ plane
$s=E\times t=|E||t|\sin\theta$
Let $s=t$

$E=1/\sin\theta$
$=1/\sin\theta=1/\sin 60°=0.866$

$t=0$; $E=-1.25$ (The zeros)
$\pi(x,a,d)=1/\varphi\cdot\int 1/\ln t\, dt+\emptyset(x^{1/2+\varepsilon})$ where $\varepsilon>0$ & $x\to\infty$
$=\int 1/\ln t+\emptyset$
$M=E=\ln t$
$=\int 1/M$
$=\int 1/E$
$=\int t\int=t^2/2=(1/2)^2/2=1.25=E\min\Rightarrow$GMP

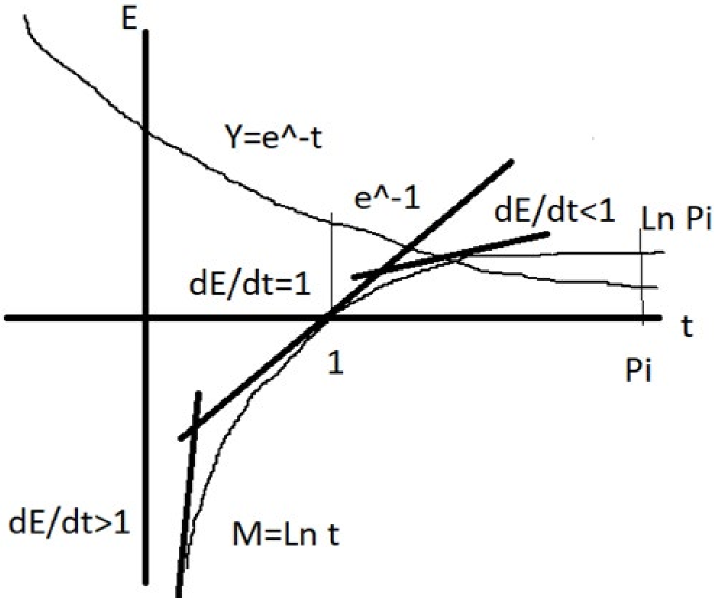


Figure 4: The Energy and Mass ln function plot showing derivatives.

$\bar{F}=\bar{P}$
$\sin\theta=\cos\theta$
$\theta=t=\pi/4$

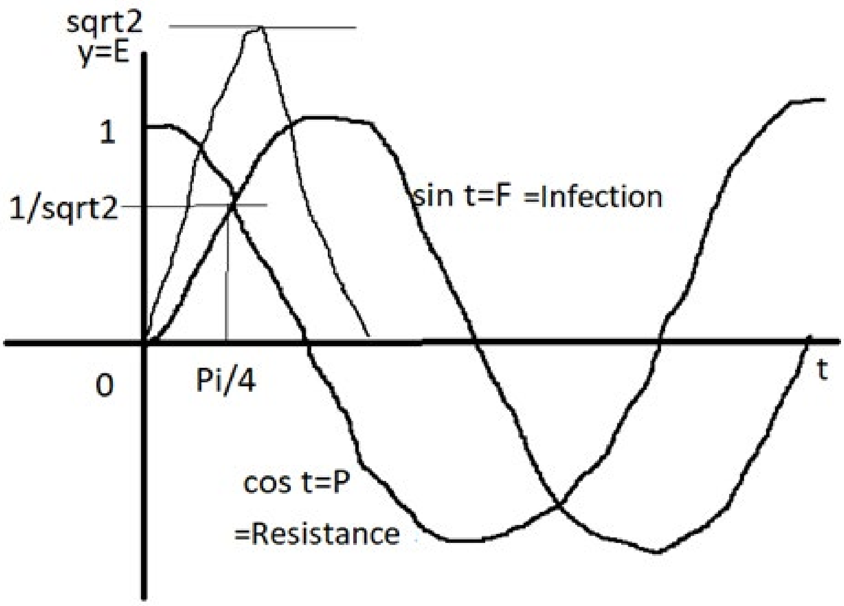


Figure 5: The Sin and Cos plot where sin=cos maximum Energy.

$\zeta=\Sigma 1/n^s$ where $n=1\rightarrow\infty$
$\zeta=\sqrt{(-1)}=i=\int 1/n^s$

$i=-0.618$
$i=sn^{s-1}/(s-1)$
Let $i=s=x$

$x=sn^{s-1}/(x-1)$
$x=1/(x-1)$ when $sns^{-1}=1$
$s(s-1)$ Ln $n=$ Ln 1
$s^2-s=0$
$s(s-1)=0$
$s=0;\ s=1=t$

$i(i-1)=-0.618(-0.618-1)=1$
$i=sn^{s-1/}(s-1)$
$i(s-1)=sn^{s-1}$

Let $i=s$

$s(s-1)=sn^{s-1}$
$s^2-s=sn^{s-1}$
$sn^{s-1}=1$
$(s-1)$ Ln $sn=$ Ln $1=0$
$s-1=0$
$s=1$
Ln $sn=0$
$sn=0$
$n=0=t$
P =NP
P=Polynomial Time
P=NP

$t^2-t-1=0$
Let $y=y'$
$v=a$
$\bar{F}=\bar{P}$

$Ma=Mv$
$\sin t=\cos t$
$t=45°=\pi/4$

$s=E\times t=|E||t|\sin\theta$
Let $s=t$
$E=1/\sin\theta=1/t$
$t=\sin t=\cos t$
$\cos^2 t-\cos t-1=0$

Let $t=0;1$
$(\cos 0)^2-\cos 0-1=0$
$1^2-1-1=-1$
$(\cos 1)^2-\cos 1-1=0$
$=-1.248\approx-1.25=E_{min}$

Navier Stokes
$\partial/\partial t\,(\rho u)+\nabla\cdot(\rho u\times u)=-\nabla\rho+\nabla\cdot\tau+\rho g$

Dot and cross products

$\nabla\cdot(\rho u\times u)$
$=\nabla\cdot|\rho u||u|\sin\theta$
$=\nabla|\rho u||u|\sin\theta\cos\theta$
$=\nabla(\rho u^2)\sin\theta\cos\theta$
$=y'=y$
$=2y=2e^t$
$=2e^t$

$=2e^t(\rho u^2)\sin\theta\cos\theta$
$=2e^t 2\rho u\cos\theta(-\sin\theta)$
$=-4e^{(\pi/4)}2(\pi/4)\,u\,(\cos^2 45°)$
$=e-^{(\pi/4)}\pi$
$=0.1432$
$=1/0.698$
$\sim 1/7$

Aside:
PV=nRT
P=RT/V
T=Temperature=Constant

P=R/V

Hookes Law:
$\sigma=Y\varepsilon$
$F/A=0.4233(\Delta L/L)$
$F=0.4233=\sin\theta$
$\theta=25.0=$Period $T=E^2=5^2 \Rightarrow y=y'$

$\partial/\partial t\ \rho u+\nabla\cdot(\rho u\times u)=-\nabla\rho+\nabla\tau+\rho g$
R/V (7) +(-1/7) =-dE/dt (R/V) +(R/V) ·0.4233+R/V) G
7-1/7=-(2t-1) +0.4233+6.67
-1.2361=-2t
t=-0.618
=i
$=\sqrt{(-1)}$

M=1/81=0.012345679
7(1/7) +dM/dt
$1+2=3=t \Rightarrow E=5$ $y=y'$

Hodge's Conjecture
Algebraic amd Complex Geometry

$t^2-t-1=0=E$
$t=-0.618=\sqrt{(-1)}=i$
M=Ln t=E=0
t=1

Two complex variables
$(1+i)(1-i)=1+i^2$
$1+(\sqrt{-1})^2$
$=0 \Rightarrow$sphere genus (Can be reduced to a point)
Complex Variable
n-r=2 Dimensions

2-r=2
$r=0 \Rightarrow$set of polynomial equations
$\pi^2-\pi-1=57.29°=1$ rad= genus of torus (Can't be reduced to a point)
$s=E\times t=|E||t|\sin\theta$
s=t
$E=1/\sin\theta$
$1=1/\sin\theta$
$\theta=90°=\pi/2$

Yang-Mill Theory
Lie Theory$\Rightarrow$AT Math

Mass Gap >0

There is negative mass when t>0
M=Ln t
dM/dt=2=1/t
$t=1/2 \Rightarrow$GMP $y=y'$
M=Ln t=Ln 1/2=-0.693 Negative Mass. Therefore, Yang Mills is false.
There is negative Mass.
M=1/81=0.012345679
$1/7(7)+2=3=t \Rightarrow E=5$ $y=y'$

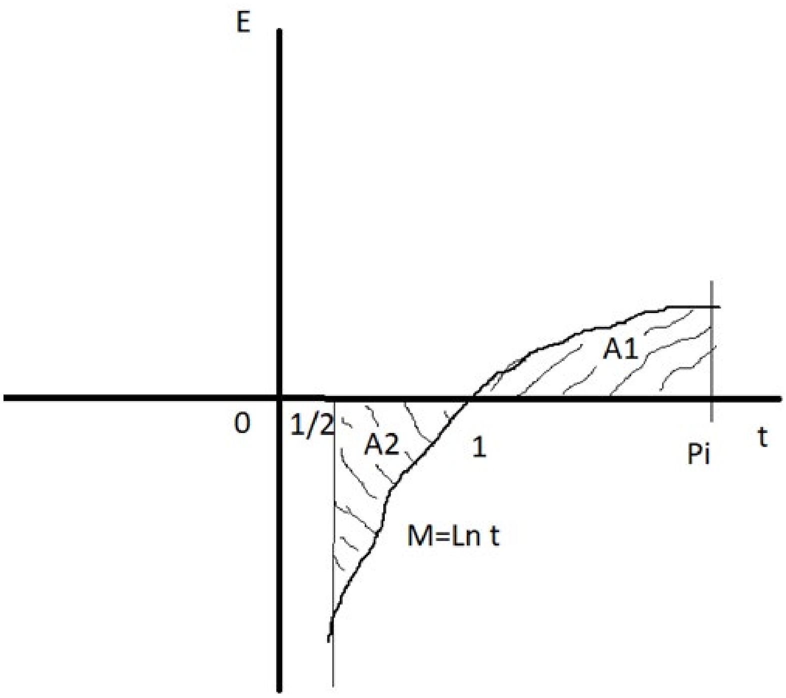


Figure 6: The Integral of the Ln functuion.

$M=t$
$t'=1/t$
$dt/dt=1=1/t$

$t=1$
$t=KE=1/2Mv^2$
$1=1/2M\ (1/\sqrt{2})^2$
$M=4$

$\int Ln\ t$ from $\pi\rightarrow 1=\{\pi\cdot Ln\ \pi-\pi\}-\{1\cdot Ln1-1\}$
$=1.454679$
$\int Ln\ t$ from $1/2\rightarrow 1=\{1/2\cdot Ln\ (1/2)-1/2\}-\{1\cdot Ln1-1\}$
$=0.1534$

Atotal=1.464579+(-0.1534) =1.301α13
$E^2+E-2=t$
$13^2+13-2=180=\pi=t$
$\pi^2-\pi-1=57.29°=1$ rad

Birch-Swinnerton Dyer

Dampened Cosine
$y=e\text{-}t \cos\theta$
Hooke's Law
$F=-ks$

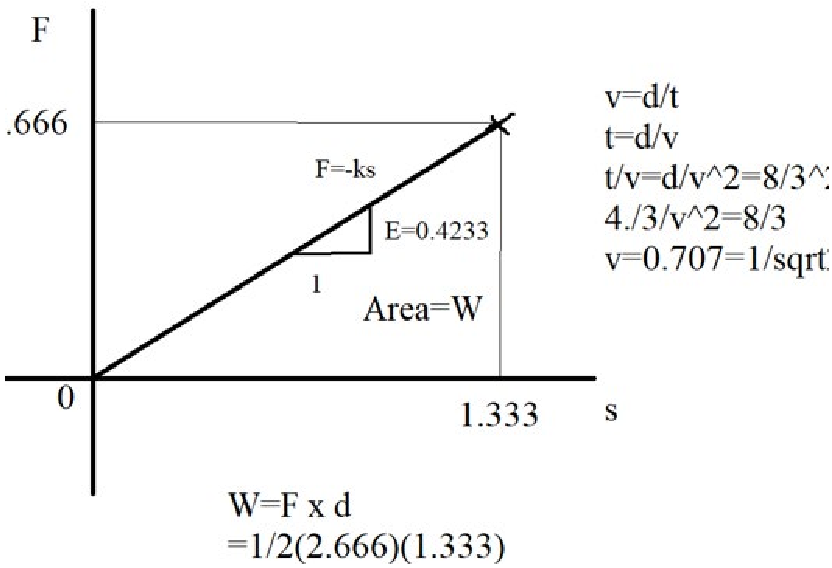


Figure 7: Young's Modulus=cuz=0.4233 Hooke's Law.

$E=1/\sin\theta=1/F$
$F=\sin\theta=-ks$
$\bar{P}=\bar{F}=\cos\theta=-ks$
$y=e^{-t}(-ks)$
$y=E(-ks)$
$y=E(F)$
$y=E(1/E)==1=E$
$y=e^{-t}\cos\theta$
$1=e^{-t}\cos\theta$
$e^{t}=\cos t$
$t=0$
$y=e^{-\pi/4\pi}\ (0.4233)\ (4/3)$
$=25733165=1286(2)=u\bar{v}\ (2)$

Birch and Swinnerton-Dyer conjecture, in mathematics, the conjecture that an elliptic curve (a type of cubic curve, or algebraic curve of order 3, confined to a region known as a torus) has either an infinite number of rational points (solutions) or a finite number of rational points, according to whether an associated function is equal to zero or not equal to zero, respectively [1].

$E=0\Rightarrow$infinite number of solutions (rational points)
$E\neq 0\Rightarrow$finite number of solutions (rational points)

Assume $y=y'$
$\sin 45°=\cos 45°$
$\bar{F}=Ma=\bar{P}=Mv$
$s=v=ds/dt=a=d^2s/dt^2\Rightarrow y=y'$
$\sin^2\theta+\cos^2\theta=1$
$(1/\sqrt{2})^2+(1/\sqrt{2})^2=1$
$1/2+1/2=1$
$1/R^2+1/R^2=1$
$2/R^2=1$
$R=\sqrt{2}$
$\sin 45°=1/\sqrt{2}=\cos 45°$
$\sin^2 45°+\cos^2 45°=1$
$(1/\sqrt{2})^2+(1/\sqrt{2})^2=1$
$1/2+1/2=1$

$y=y'$
$t^2-t-1=E=dE/dt=2t-1$
$t^2-t-2t-1+1=E$
$t^2-3t=E=0$
$t(t-3)=0$

$t=0;\ t=3$
$t=3;\ E=5\ (3,5)$
$x^2+y^2=R^2$

$t^2+E^2=t^2$
$3^2+y^2=3^2$
$y=0=E$

Circle:
$x^2+y^2=R^2$
Let $x=y=E=t$
$2x^2=R^2$

Torus:
$(2x^2)^2=(R^2)^2$
$4x^4=R^4$
$R=4^{0.25}=\sqrt{2}=\sin 45°+\cos 45°$ $t=\pi/4$
$E=1$; $t=1$
(1,1)

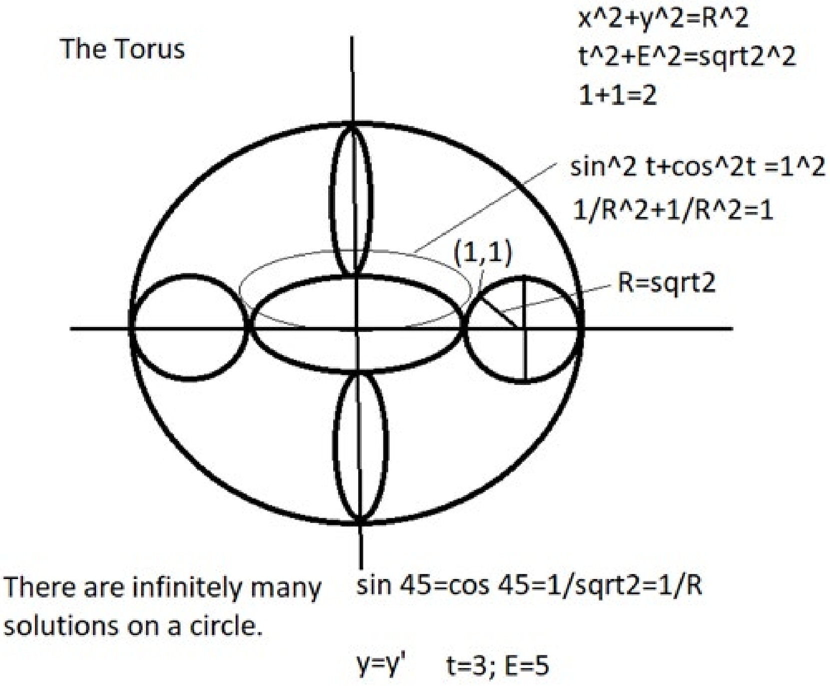


Figure 8: The Torus

$t=3$; $E=5$

Left handed $-s=-t=-(-0.618)=-i=-\sqrt{(-1)}=0.816$
$(1-i)=1-(-0.618)=1.618$

Continuing,
$E^2+E-2=t$
$(-5)^2+(-5)-2=18=t=KE$
$KE=1/2Mv^2=1/2(4)(3)^2=18=t$

$E=0$; $t=1 \Rightarrow \text{Ln } t=M=\text{Ln } 1=0$

$t=0$
$t^2-t-1=E$
$0^2-0-1=-1$

$t=0$; $E=-1 \Rightarrow$GMP
$t=c=v=d/t=s/t$
$t^2=s$
$(\sqrt{(-1)})^2=-1=E$

$s=E\times t=|E||t|\sin t$
$s=\sin t=F=t$
$-1=\sin t$
$t=-90°$

Dampened cosine curve:
$Y=e^{\wedge}-t \cos t$
$0=e^{\wedge}-t\cos t$
$t=90$ degrees=Pi/2

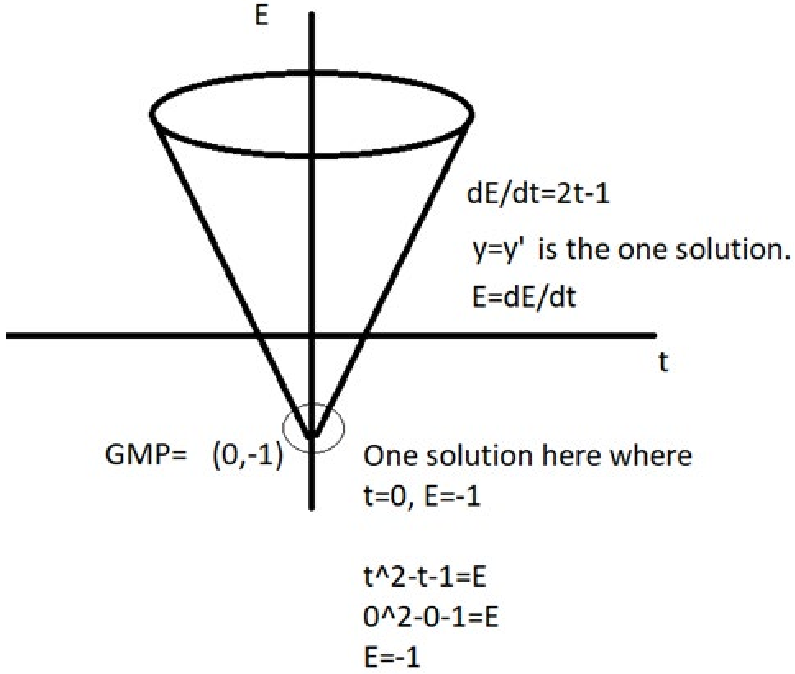


Figure 9: The Cone

Conclusion

There are an infinite number of solutions when E=0 There is one solution when E≠0=-1 the point of the cone.

Poincare

Introduction

The Clay Mathematics Institute has the Poincare' problem statement as follows:
If we stretch a rubber band around the surface of an apple, then we can shrink it down to a point by moving it slowly, without tearing it and without allowing it to leave the surface. On the other hand, if we imagine that the same rubber band has somehow been stretched in the appropriate direction around a doughnut, then there is no way of shrinking it to a point without breaking either the rubber band or the doughnut. We say the surface of the apple is "simply connected," but that the surface of the doughnut is not. Poincaré, almost a hundred years ago, knew that a two-dimensional sphere is essentially characterized by this property of simple connectivity, and asked the corresponding question for the three-dimensional sphere.

This question turned out to be extraordinarily difficult. Nearly a century passed between its formulation in 1904 by Henri Poincaré and its solution by Grigoriy Perelman, announced in preprints posted on ArXiv.org in 2002 and 2003. Perelman's solution was based on Richard Hamilton's theory of Ricci flow, and made use of results on spaces of metrics due to Cheeger, Gromov, and Perelman himself. In these papers Perelman also proved William Thurston's Geometrization Conjecture, a special case of which is the Poincaré conjecture. See the press release of March 18, 2010.

Source: Poincaré Conjecture | Clay Mathematics Institute
Here is the correct solution.

The Point and he Perpendicular Zero Vector:

$\bar{u} \cdot \bar{v} = |\bar{u}||\bar{v}|\cos\theta$
$0=\cos\theta$
$t=90°=\pi/2$

$\bar{z}\perp 0$
$\bar{z}=\bar{E}$
$\bar{t} \perp \bar{E}$

Aside:
multiple =Fraction

$x=1/(x-1)$
$\infty=1/\infty$
$\infty=0$
$\infty^2=1$
$\infty=\pm 1,0$
$t=\pm 1=s$

$E/1/t=1/s=1/\pm t=\pm 1$

$t=0;\ E=-1$
$t^2-t-1=E=-1$
$t(t-1)=0$
$t=0;1$
$t=0=1/\infty$

$E=\infty$
$dE/dt=2t-1$

$2t=2$
$t=1$

$M=\text{Ln } t=\text{Ln}1=0=E$

$\alpha \cdot G \cdot C = 138 \times 6.67 \times 1.602 = 148 \approx 150$
$=1/6.7540$
$6.75x\ 8 = 54.032 \approx TE = PE + KE = 36 + 18$
$1\ x8\ x\ 22$ Ellipsoid$=\sqrt{[1^2+8^2+22^2} = 23.4307$
$\mathrm{Ln}\ 23.4307 = 1.499 \approx 1.5$
$\sqrt{[3^2 \times 24^2 \times 66]}\ ^2 = 7.03 \approx 7$

Surface Area of Ellipsoid=19905
19905/ 8.9755=22.2=Radius of Orb sphere
Dia of Orb (Sphere=44.4)
$S = Vol = 4/3\pi R^3 = 4/3\pi\ (22.17)\ ^3 = 4.5504 = 1/2.197 \approx 1/22$
$E=22$
$s=uv=7.03$
$E/s=22/7=3.142 \approx \pi$
$E\hat{}2 = \pi = 1.772 = Work = F \times d = 1/E\ s = s/E$

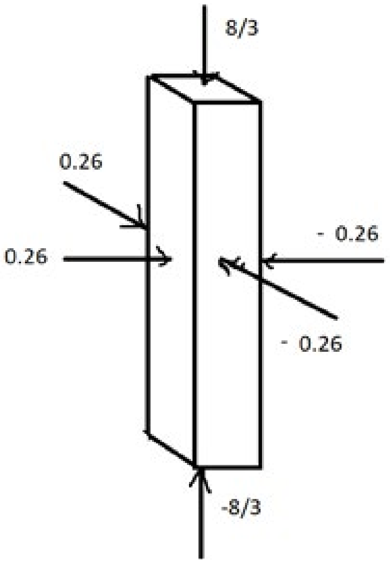


Figure10: Poisson's Ratio based on the GMP

$\nu = F_{LATERAL}/F_{AXIAL}$
$0.26 = F_{\ LATERAL}/\ (8/3)$
$F_{LATERAL} = 0.6928 = \mathrm{Ln}\ 2$
$M = \mathrm{Ln}\ t$

$t=2$
$2^2-2-1=1=E$

So, we have space, energy, and time and Mass.

The Line:

$\nu = F_{LATERAL}/F_{AXIAL}$
$(FL)^2/FA = \nu^2$

$(FL)^2 = (0.26)\ ^2\ (8/3)$
$(FL)^2 = 0.17965 \approx 0.180 = \pi = t = KE$

$0.18^2 + 0.26^2 = 0.1^2 \alpha\ t = E$

$KE^2 + \nu^2 = TE^2$
FL-=0.4238=E=Young's Modulus=*cuz*

⇒Linear Relationship: Hooke's Law
$\sigma = Y\varepsilon$
$\varepsilon = (F/A)/\ (0.4233)$
$\varepsilon = (0.4238/A)/\ (0.4233)$
$\varepsilon = 1.001/A = 0.26$

$A=0.385$
$L=\sqrt{0.385366}=196=\infty$

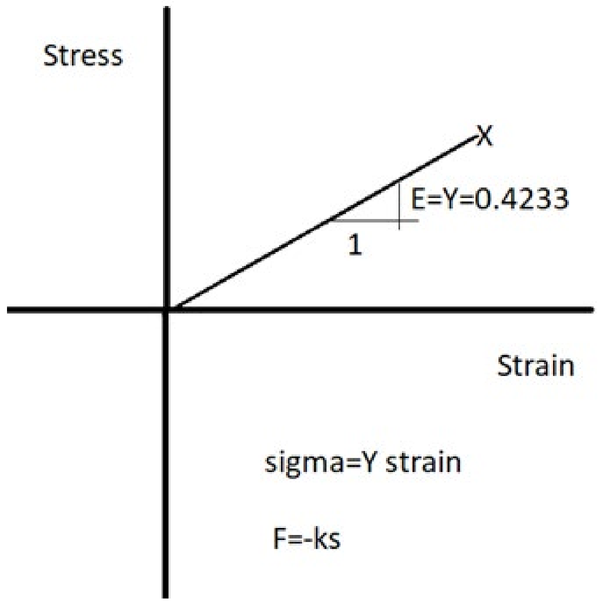


Figure 11: Stress-Strain curve showing linear relationship.

$\varepsilon = 0.2598 \approx 0.26 = \nu$ =Poisson's Ratio.
$t_f/t_i = 0.26$
$\pi/t_i = 0.26$
$t_i = \pi/0.26 = 12.09$
$12.09^2 - 12.09 - 1 = 1.332 \approx 4/3 = s$

$s=1/s$
$s^2=1$
$s=\pm 1$
$\infty = 1/\infty$
$\infty^2 = 1$
$\infty = \sqrt{1} = \pm 1 = s = t$

Ellipse

Consider the set S={z∈C:|z+i|+|z−i|=4}. S={z∈C:|z+i|+|z−i|=4}.

I understand this is the set of points which trace an ellipse. I think this is connected, as if I pick any two points, I can always form a path (along the ellipse), but this is not simply connected, as I can't shrink any two points to a closed loop "small enough".

Is there a way to show this more "formally"?

The ellipse in your question (which I'll call EE, for brevity) is homeomorphic to the circle S1S1. Recall that for a space XX to be simply connected, it must be path connected and its fundamental group must be trivial, π1(X)={[cp]} where cp is the constant path.

Now the fundamental group $\pi 1\pi 1$ of S1S1 is the ring of integers, so $\pi 1(S1) = Z\pi 1$ and since homeomorphic topological spaces have isomorphic fundamental groups, we have $\pi 1(E) \cong \pi(S1) = Z\pi 1(E) \cong \pi(S1) = Z$.

Since $\pi 1(E)$ has a nontrivial fundamental group we can conclude that it is not simply connected [2].

$S = \{z \in \mathbb{C}: |z+i|+|z-i|=4\}$
$(z+i)(z-i) = 4 = |D|$
$z^2-i^2=4$
$z^2-(\sqrt{-1})^2=4$
$z^2+1=4$
$z^2=3$
$z=\sqrt{3}$=eigenvector

$|\sqrt{3}+(-0.618)|+|\sqrt{3}-0.618|=4$
$3.464 \approx 4$
$t=3.464/4=0.866=\sin 60° = 1/E$

$s=E \times t = |E||t| \sin 60$ let $s=t$
$E=1/\sin 60°$

Now,
$\sqrt{3}/0.866=2.0=v=t$
$0.26/2.0=1.3=E$
$E^2+E-2=13^2+13-2=180=\pi$rads

Let $Z=t=2$

$|2+(-0.618)|+|2-(-0.618)|$
$=1.382+2.618$
$=3.999=4$

30-60-90 triangle
$t=1$
$v=2$
$z=\sqrt{3}$ eigenvector
$(0.866)^2-(0.866)-1=-1.116=1/8.96=1/c^2=M=\mathrm{Ln}\ t$ $t=1.116$

$t=E$

space X foundation group $=\pi 1S^1=\{|cP|\}$
$\pi 1(t)=\{|cp|\}=0.866=c_p=t=\sin 60°$
$\pi 1S^1=\mathbb{Z}$
$\pi 1(S^1)=\pi 1(E1)=\mathbb{Z}$
$4=3.464=\mathbb{Z}$

$\mathbb{Z}=0.866=c_p$
$t=\sqrt{3}$
$\mathbb{Z}=0=\sin t$

Point (0,1)
$t=0$
$t^2+v^2=E^2$
$(\sqrt{3})^2+0.26^2=E^2=3.07$

$E=175=1$ rad
$(\sqrt{3})^2+v^2=3.464^2$
$v^2=8.999 \approx 9$
$v=3=c=t \Rightarrow y=y'$

$c=v=d/t=t$
$d=s=t^2$
$4/3=s=t^2$

$t=2/\sqrt{3}$
$E=1/t=\sqrt{3}/2=\sin 60°=\mathbb{Z}=c_p=t$
$9^2-9-1=7.098 \approx 1/\sqrt{2}=v=a=s \Rightarrow y=y'$
$E=1/s=1/(1/\sqrt{2})=\sqrt{2}=\sin 45°+\cos 45°$

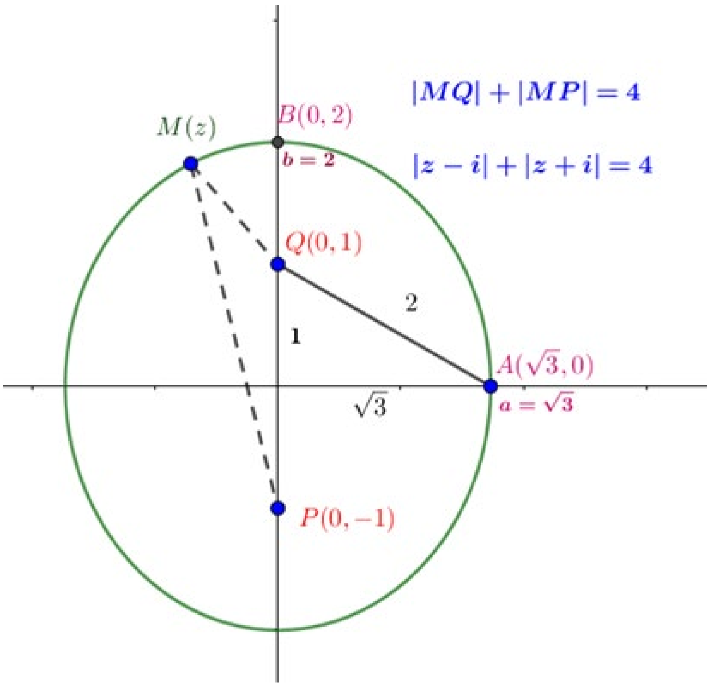


Figure 12: Plot of Ellipse Equation.

How to find [math]\ {z: |z-i|+|z+i|=4\} [/math] - Quora Date Accessed: December 2,2022.

Euler's Identity:

$\sin^2 45°+\cos^2 45°=1^2$

$(1/\sqrt{2})^2+(1/\sqrt{2})^2=1$

$½+½=1$

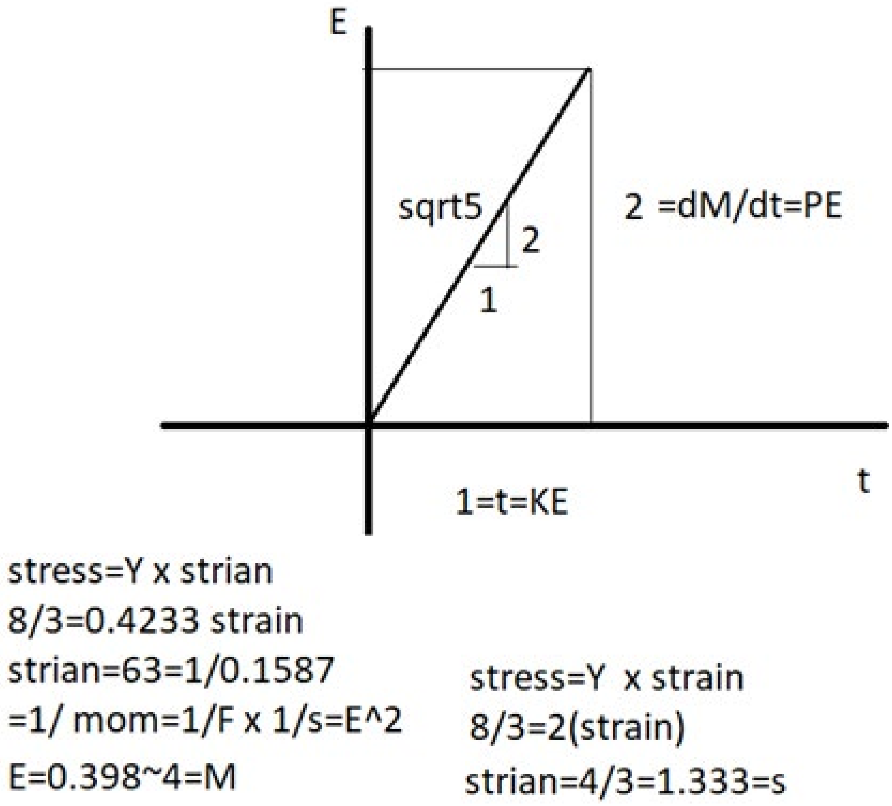


Figure 13: The 1-2 root 5 triangle (GM Triangle)

1 sphere=circle &ellipse

$x^2/a^2+y^2/b^2=1$

$x^2/3+y^2/4=1$ ellipse

$x^2/2+y^2/2=4$

$x^2+y^2=8$ Circle

$x=t$
$t=8$
$y=E=1$
$t^2+E^2=t$
$t^2+1^2-t=0$
$t^2-t-1=0 \Rightarrow$GMP

$x^2/a^2+y^2/b^2=R^2$
$t^2/(\sqrt{8})^2+E^2/1^2=R^2$

$t^2/8+E^2/1^2=R^2$
$i=\sqrt{(-1)}$
$t=-0.618$
$t^2=-1$

$-1/8+\sqrt{8}^2=R^2$
$PE+t=R^2$

$PE+KE=R^2$
$8-1.25=6.75=R^2$
$R=0.2598\sim 0.26=$Poisson's Ratio

Aside:
$PE=Mc^2$
$1/8=4(v^2)$
$1/8=4(v)^2$
$1/8=4(v^2)$
$1/2=v^2$
$v=1\sqrt{2}=\sin 45=\cos 45$

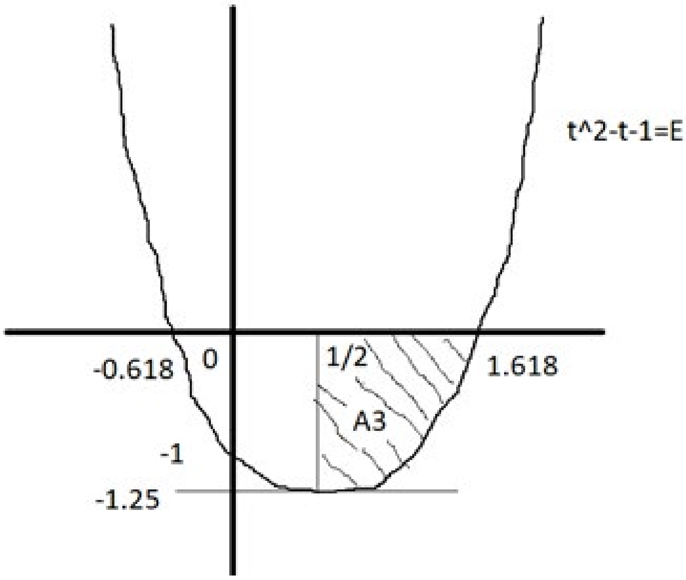


Figure 14: Plot of GMP.

t^2-t-1=E
∫t^2-1 dt =∫ E dt →from 1 to π
$t^3/3-t^2/2-t=E^2/2\ |1^\pi$
½²/3-½²/2-½=$E^2/2$
0.333=1/c=$E^2/2$
E=0.816←

Now the A1=A2=figure 1.

A1=∫Ln t →from 1 to π
t·Ln t-t $|1^\pi$
={π·Lnπ-π}- {1·Ln 1-1}
=0.45467-(-1)
=1.4546
A1+A2=2(1.4546) =2.909
A1+A2+A3=2.909+0.8165=3.7255=1/2.68=1/F=E

2 spheres +time

s=Vol=4/3πR^3
t=KE=1/2Mv^3
Let s=t so that E=1/sin 60°=1.1547
4/3πR^3=1/2Mv^2
4/3πR^3=1/2(4) (1/√2)
R=3/4π=135°
R=23.81
M=Ln 23.81
=3.17
=1/π
=M=E

E=1/t t=π
R=3/4π
R=133.06=s
$R^3=s^3=(1/\sqrt{2})^3=2.8284=4(1/\sqrt{2})=Mv=\overline{P}=\overline{F}\Rightarrow t=45°=\pi/4$

Harmonic Series:
$H(n)=\Sigma_{t=1\to n}=1/t$
∫1/t=Ln t=M=E
t=π

4d spacetime:

E,t,s
S=E xt=|E||t| sin t

Let s=t
E=1/sin 60 =1.1547=1/0.866
E=1/t
t=0.866=sin 60 =F=s
s=0.866; t=0.866; E=1/0.866.
0.866^2-0.866-1=E=-1.116=-1/c^2=M when E=-1 @t=0 (**point**)

F=-ks
=-0.4233 (4/3)
=0.564
E=1/t=1/sin θ=1/F
=1.7722
1.7722+KE=1.77+18=19.77
+PE=19.77+36=55.77=1/179~1/180=1/Pi Harmonic
0.866^2=0.7499~0.75=1/s=E

The Beal conjecture

The Beal conjecture basically goes like this.

If $A^x + B^y = C^z$

And A, B, C, x, y, and z are all positive integers (whole numbers greater than 0), then A, B, and C should all have a common prime factor.

A common prime factor means that each of the numbers needs to be divisible by the same prime number. So, 15, 10, and 5 all have a common prime factor of 5 (they're all divisible by the prime number 5).

So far, so simple, and it looks like something you would have solved in high school algebra.

But here's the problem. Mathematicians haven't ever been able to solve the Beale conjecture, with x, y, and z all being greater than 2.

For example, let's use our numbers with the common prime factor of 5 from before.

$5^1 + 10^1 = 15^1$

but

$52 + 10^2 \neq 15^2$

There's currently a $\boxed{\text{US\$1 million prize on offer}}$ for anyone who can offer a peer-reviewed proof of this conjecture… so get calculating.

$A^x+B^y=C^z$
X Ln A+yLn B=z Ln C
$xA+yB=zC=A^x+B^y=C^z$
$zC=C^z$
$y=y'$

$(z^c)'=cz^{c-1}/ (c-1) \geq 2$
$cz^{c-1}=2(c-1)$
$=2c-2=cz^{c-1}$
$=2t-1-1=tz^{t-1}-1$
$=2t-1-1+1=tz^{t-1}$

$2t-1=tz^{t-1}$

$dE/dt=2t-1=t^2-1-1=E$
$dE/dt=E \Rightarrow y=y' \Rightarrow t=3$: E=5
$2(3)-1=3_z^{3-1}$
$5=3z^2=E$
$t^2-t-1=E$
t=3=c when E=5

$A^x+B^y=C^z=3^z$
Ax+By=Cz=3z
$\int Ax+By= \int 3z$
$3z^2/2=xA^2+yB^2=zC$
$3z^2/2=zC=z\ (3)$
$z^2=2z$
$y=y'$
$z\geq 2$

$A^x+B^y=C^z=3^2=9$
$A^x+B^y=9$

Let $x=y=z\geq 2$
$A^2+B^2=9$
2A+2B=2C=6

Two equations two unknowns

$A^2+B^2=9$
2A+2B=6
6-2A=2B
3-A=B
$A^2+(3-A)=9$
$A^2-A+3=9$
$A^2-A-6=0$
A=3; A=2

Now
3-A=B
3-3=0=B
3-2=1=B
$A^x+B^y=C^z$
$3^x+1^y=3^2$
$3^2-3^x=1$
$9-3^x=1$
$-3^x=1-9=8$
$3^x=-8$
xLn3=-Ln 8
x=-Ln 8/Ln3
$e^x=-e^{(8/3)}$
x=-8/3=SF=1/E

So,
$3^x+1^y=3^2$
$3^{(-8/3)}+y1=9$

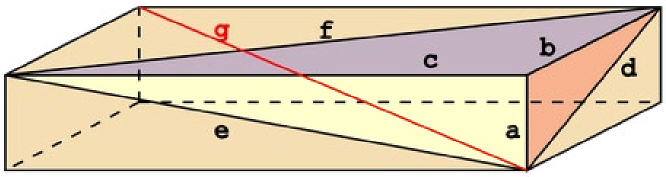
$3^{(-8/3)}+y=8$

0.0534+y=8

$y=7.9457\approx\pi/4=t$ when $y=y'$

$=1/0.125=1/E=t$ from AT Math$\Rightarrow$ GMP

Perfect Cuboid Problem



GFIS
Figure 15
Remember the Pythagorean theorem, A2 + B2 = C2? The three letters correspond to the three sides of a right triangle. In a Pythagorean triangle, and all three sides are whole numbers. Let's extend this idea to three dimensions. In three dimensions, there are four numbers. In the image above, they are A, B, C, and G. The first three are the dimensions of a box, and G is the diagonal running from one of the top corners to the opposite bottom corner.

Just as there are some triangles where all three sides are whole numbers, there are also some boxes where the three sides and the spatial diagonal (A, B, C, and G) are whole numbers. But there are also three more diagonals on the three surfaces (D, E, and F) and that raises an interesting question: can there be a box where all seven of these lengths are integers?

The goal is to find a box where $A^2 + B^2 + C^2 = G^2$, and where all seven numbers are integers. This is called a perfect cuboid. Mathematicians have tried many different possibilities and have yet to find a single one that works. But they also haven't been able to prove that such a box doesn't exist, so the hunt is on for a perfect cuboid.

$A^2+B^2+C^2=G^2$
$A^2+B^2=G^2-C^2$

From the Beal conjecture proof, we know:

A=3,2
B=1
C=3

$2^2+1^2=G^2-3^2$
$G^2=374165\approx1/0.267=1/SF=E=t=C=3$

Now:
$G^2=3$=eigen value
$G=\sqrt{3}$=eigenvector

$f^2=a^2+G^2$
$f^2=a^2+3^2$
$5^2=a^2+3^2$
$a=4$ =determinant

a=4
f=5
G=3
$f^2=1^2+3^2$
f=5

$d^2=a^2+c^2$
$d^2=4^2+c^2$
$d^2=16+3^2=25$
d=5

a=4
b=1
c=3
d=5
f=5
$e^2=a^2+c^2$
$=4^2+3^2$
=25
e=5

$\Sigma=A+B+C+G+d+g+e$
$=3+1+3+3+5+5+5$
$=25=E^2$
E=5
$3^2+4^2=5^2$
$v^2+M^2=E^2$
$s/t^2+(\text{Ln } t)^2=1/t^2$
$s+(t\cdot\text{Ln}t)^2=1$
s=t
t-tLn t=1
x Ln x-x=1=Area=$\int$Ln x=1
Ln x=$\mathbb{C}$=1
x=e1=t
$1/t=E=e^{-t}$

QED

Goldbach's conjecture

Similar to the Twin Prime conjecture, Goldbach's conjecture is another famous and seemingly simple question about primes. It goes like this: is every even number greater than 2 the sum of two primes?

It sounds obvious that the answer would be yes, after all, 3 + 1 = 4, 5 + 1 = 6 and so on. At least, that was the original conjecture by German mathematician Christian Goldbach back in 1742.

Since then, we no longer follow the convention of seeing 1 as a prime, but the 'strong' version of Goldbach's conjecture lives on: all positive even integers larger than 4 can be expressed as the sum of two primes.

And yet, despite centuries of attempts, until now no one's been able to prove that this will always be the case. There was even a prize advertised for this in the early 2000s,
but it went unclaimed.

The reality is that, as we continue to calculate larger and larger numbers, we may eventually find one that isn't the sum of two primes… or ones that defy all the rules and logic we have so far. And you can be sure mathematicians aren't going to stop looking until they find it.

6,8,10,12,14,16,18....

Let P1 & P2 be any two prime numbers. Let n be any number greater or equal to 1.

$(n+2^n)/P1+P2>4$

$n+2^n> 4(P1+P2)/\sqrt{}(-1)^q$ q=1 $(\sqrt{-1})^n=-1$ q=2
$(-1)+2^{-1}> 4[P1/+P2]$
$=(-1)+1/2=-1/2$
$-1/2> 4[P1+P2]$
$-1/8>[P1+P2]$
$E_{min}=-1.25>[P1+P2]$
$t^2-t-1=E$
t=1/2
$[P1+P2]=t^2-t-1$
$t^2-t-1=-1$
$t^2-t=0$
$t(t-1)=t$
t=0;1
[P1+P2] =1

$P1^2+P2^2=1^2$
$\sin^2\theta+\cos^2\theta=1$

$x^2+y^2=R^2$
$2x^2=R^2$
Let R=1
$x=1/\sqrt{2}=\sin 45°=\cos 45° \Rightarrow y=y'$
Pythagoras
$a^2+b^2=c^2$
$t^2+E^2=c^2$
$1^2+1^2=c^2$
$c=\sqrt{2}=\text{diameter}$

$x^2+y^2= (\sqrt{2})^2=2$
$nP1^2+nP2^2=2n$
$t^2-t-1=1$
$t=-1;2$
n=2 even multiple

$(1/2)\ P1^2+(1/2)\ P2^2=2n$

$P1+P2=4=2n$

The sum of two primes is even greater than 4.
QED

Conclusion
The solution to the CMI Millenium Problems involves an understanding of AT Math.

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