



# The Reimann Hypothesis Clay Institute Millenium Problem Solution

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**Abstract:** This paper explains how the Riemann Hypothesis is a critical line which results from the Golden Mean Parabola skewed at 60 degrees. The equation gives the roots to the serial of Prime Numbers. The 6-0 degree failure Plane comes from Soil Physics.

## 1. INTRODUCTION

The Riemann zeta function  $\zeta(s)$  is a function whose argument  $s$  may be any complex number other than 1, and whose values are also complex. It has zeros at the negative even integers; that is,  $\zeta(s) = 0$  when  $s$  is one of  $-2, -4, -6, \dots$ . These are called its **trivial zeros**. However, the negative even integers are not the only values for which the zeta function is zero. The other ones are called *non-trivial zeros*. The Riemann hypothesis is concerned with the locations of these non-trivial zeros, and states that:

The real part of every non-trivial zero of the Riemann zeta function is  $1/2$ .

Thus, if the hypothesis is correct, all the non-trivial zeros lie on the **critical line** consisting of the complex numbers  $1/2 + it$ , where  $t$  is areal number and  $i$  is the imaginary unit.

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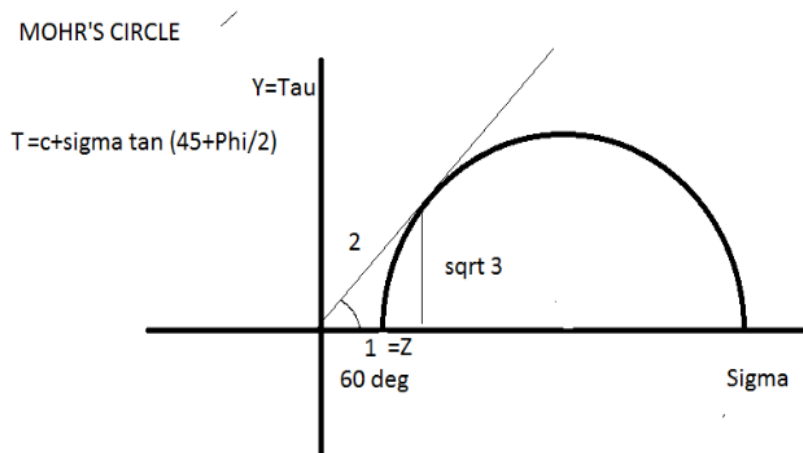


ILLUSTRATION 1 MOHR'S CIRCLE

## 2. SOIL MECHANICS

From Soil Mechanics we know from Mohr-Coulomb Failure:

$$\text{Tau} = c + \text{sigma} * \tan (45 + \text{Phi}/2)$$

$$26.667 = 0 + (\text{sqrt } 3 * \tan (45 + 30/2))$$

$$= 26.667 / \text{sqrt } 3 = 0.1539$$

( $F=26.667$  is the shear failure pressure. Refer to Astrotheology Cusack's Model of the Universe)

$\tau=F \cdot \sin \theta=88.5=k$ =Permeability of the Universe

So,

$Au/2=\sin 60$  degrees

$Z^2+(\sqrt{3})^2/2=\sin 60$

$Z=0.5774=1/\sqrt{3}=\tan 30$  degrees

$Y=\tau/1/\tan 30 \text{ degrees} = \cot 30 \text{ degrees} = \sqrt{3}=\tan 60$

$y/z=\text{rise} / \text{run} = m$  in the Y-z PLANE

$\tan 60=Y/z=3.4641/10=e^z$

$Y=e^z$

This is the critical line of the Riemann Hypothesis.

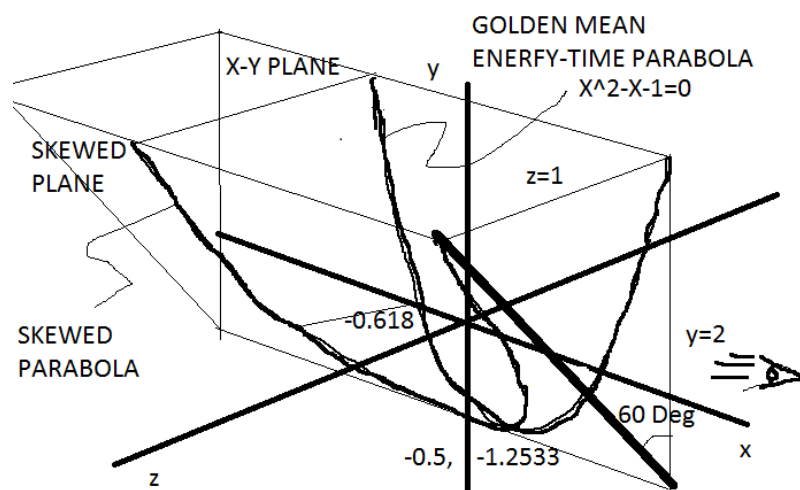


ILLUSTRATION 2 GOLDEN MEAN SKEWED PARABOLA

### 3. EQUATION OF A PLANE

$$ax+by+cz=0$$

EQUATION OF GOLDEN MEAN PARABOLA

$$X^2-x-1=0$$

Setting these equal to the skewed plane and the Energy-Time Parabola:

$$Ax+by=\sin 60 *z =x^2-x-1$$

There are 5 unknowns; therefore 5 coincident points are necessary. They are:

GOLDEN MEAN ROOTS

$$X=1.618, Y=0, Z=0 \text{ (POINT 1)}$$

$$X=-0.618, Y=0, Z=0 \text{ (POINT 2)}$$

MINIMUM POINT OF PARABOLA:

$$X=0.5, Y=-1.2533, Z=0 \text{ (POINT 3)}$$

X-Y PLANE

$$X=1, Y=0, Z=0 \text{ (POINT 4)}$$

### 4. CRITICAL LINE

$$Y=mz+b$$

$$2,0,1$$

$$0=m(1)+ b$$

$$B=-m$$

$$\text{Rise over run}=m=2/-1=-2$$

$$Y=2-2z$$

$$X=2, Y=0, Z=1 \text{ (POINT 5)}$$

### 5. SOLVE SYSTEM OF 5 EQUATIONS; 5 UNKNOWNNS

$$A=-1$$

$$B=-0.4892 \sim -0.5$$

$$Z=\text{sqrt } 2$$

$$Y=-0.8154$$

$$X=0.9087$$

$$Y=2-2z$$

$$A(1)+b(0)+\sin 60 \text{ degrees}(0)=1^2-1-1$$

$$A=-1$$

$$A(1/2)+b(-1.2533)+\sin 60 (0)=(1/2)^2-1/2-1$$

$$B=0.4892 \sim -1/2$$

$$Ax+by+\sin 60 z=1.618^2-1.618-1$$

$$0.866z -0.4892y=1.618$$

And

$$Y=2-2z$$

$$Y=2-2(\text{sqrt } 2)$$

$$Y=-0.8154$$

$$0.866 z (0.4892(2-2z))=1.618$$

$$Z=\text{sqrt } 2$$

$$Ax+by+\sin 60( z) =x^2-x-1$$

$$-x+by+\sin 60 z=x^2-x-1$$

$$(-1/2)(0.8154)+0.866(\text{sqrt } 2)=x^2$$

$$X=0.0987$$

### 6. CRITICAL LINE

$$m=-2/1 =-2$$

$$Y=mx+b$$

$$Y=2-2z$$

$$Y=2-2(1/2)$$

$$y=1$$

$$Y'=-2$$

$$y-y'-2z$$

$$y=y'-2(1/2)$$

$$yy'=-1$$

$$x=0, y=1, z=1/2$$

$$E=E'-E$$

$$E'=2E$$

$$E=E'/2$$

$$Y=1/2y'$$

$$Y=y'$$

$$Y=e^z$$

$$Y=y'(2e^z)$$

$$Y=y'+C1$$

$$Y=e^z$$

$$Y=e^z$$

$$E^1=e^{(-1)+C1}$$

$$C1=0.23504$$

Number System based on 10:

$$\ln C1=3.157\sim\pi$$

$$Y=e^z+\ln(\pi)$$

$$Y=e^z+\pi$$

### 7. THIS IS THE CRITICAL LINE OF PRIME NUMBERS

PRIME NUMBERS CALCULATED FROM EQUATION

$$Y=e^z+\pi$$

$$Y'=e^z$$

$$Y=y'=m=-2$$

$$X^2-x-1=0$$

$$(-2)-2(-2)-1=5 \text{ PRIME}$$

$$Z^2-z-1=-3$$

$$Z=1, -3 \text{ (Prime)}$$

$$Z^2-z-1=-7$$

$$Z=-2, 3$$

$$Z^2-z-1=-11$$

$$Z=-4, 3$$

etc.

THIS, THEN IS THE CRITICAL LINE OF THE SOLUTION TO THE PRIME NUMBERS ACCORDING TO THE REINMANN HYPOTHESIS.

### 8. IMAGINARY NUMBER=CONJUGATE OF THE GOLDEN MEAN

Now,

$$1/2+it$$

$$1/2+(\sqrt{-1})z$$

GOLDEN MEAN EQUATION:

$$X=1/[X-1]$$

$$1+i=1/[1+i]$$

$$X=1/[x-1]$$

$$(1+i)=1/[1+i]-1$$

$$(1+i)=1/i$$

$$(1+i)*i=1$$

$$I^2-i-1=0$$

Roots (Golden Mean and the Conjugate of the Golden Mean)

$$1.618, -0.618$$

$$I=\sqrt{-1}=-0.618$$

THE UIMAGINARY NUMBER IS EQUAL TO -0.618

$$\frac{1}{2}+(-0.618)(\sqrt{2})$$

$$=0.374=1/\sin 60 \text{ degrees}$$

$$(1/m)+i*1/\sin 60 \text{ degrees}=1/2+it$$

## 9. THE UNIVERSE

The Universe exists where the only real numbers=s are Prime Numbers. Since,

$Y=y'$  for our universe,

And

$$y=y'=e^x$$

CRITICAL LINE

$$(e^z+\pi)/e^z$$

$$1+e^z/\pi$$

All Physical Quantities should be divided as such.

$$1+e^{(4/3)}/\pi=6.93$$

$$1/6.93=0.1442$$

$$1-0.1442=0.855$$

$$\sin(-1)(0.855)=58.84 \text{ degrees}=1.027 \text{ rads}=t$$

## 10. CONCLUSION

THE CRITICAL LINDE FOR THE REIMANN HYPOTHESIS IS  $y=e^z+\pi$

### REFERENCES

- [1] ELEMENTS OF SOIL MECHANICS, G. N. SMITH.
- [2] ASTROTHEOLOGY, CUSACK'S UNIVERSE, BLOG, BY AUTHOR

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