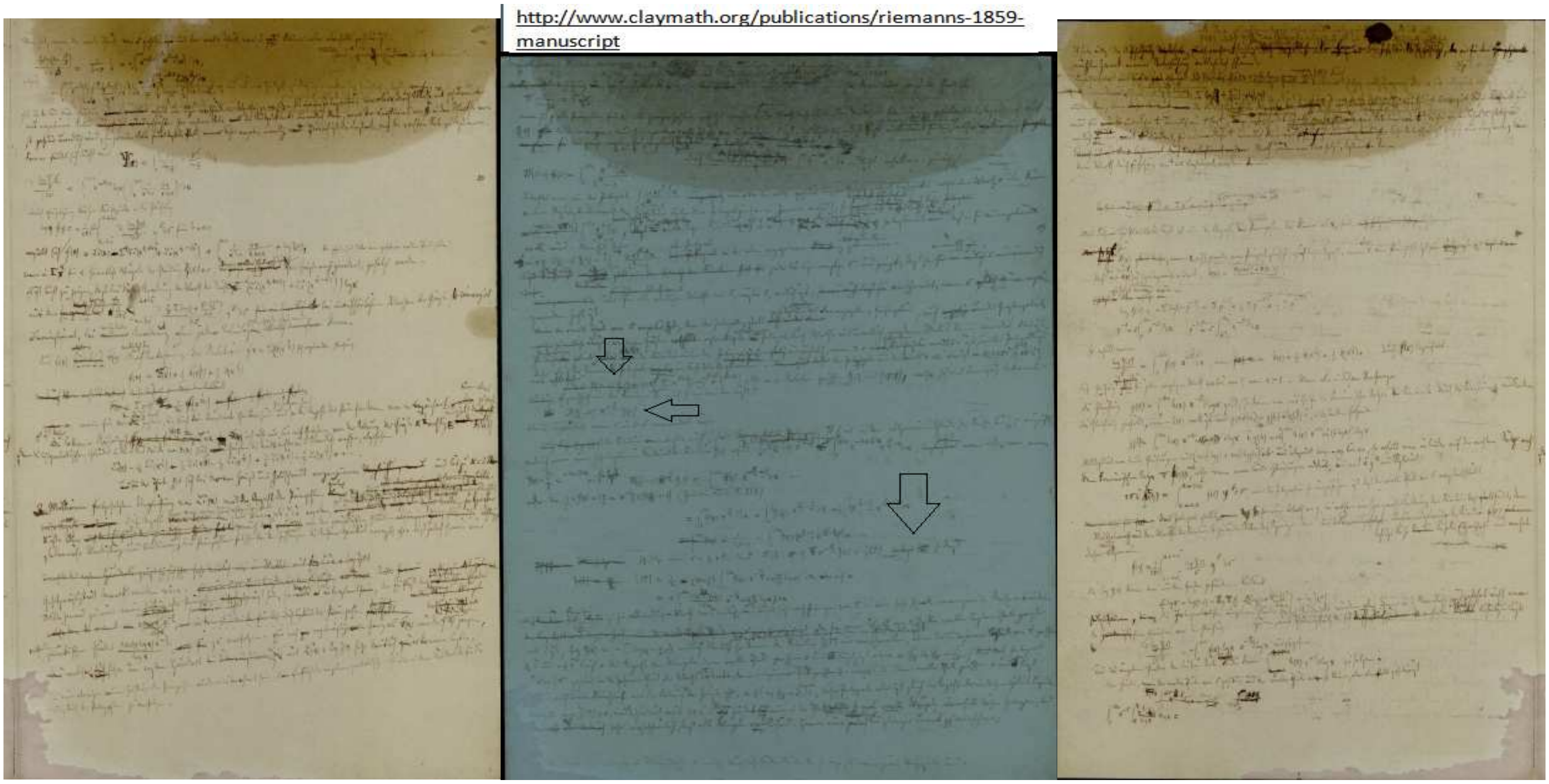
http://www.claymath.org/publications/riemanns-1859-manuscript



P VS (versus) NP Problem

http://WWW.claymath.org/millenium problems

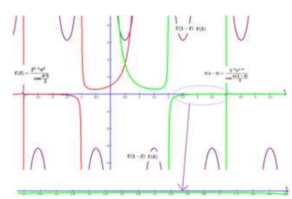
one of the outstanding problems in computer science is determining whether questions exist whose answer can be quickly checked, but which require an impossibly long time to solve by any direct procedure. , that there really is no feasible way to generate an answer with the help of a computer.

By, program Graph

the time depends on the programator's speed

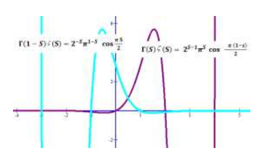
$Æ\,(S) = \frac{1}{2}\sin \pi S$, $Ͼ(t)\,Ͼ(1-t) = (j^4)\,\frac{\pi}{\sin \pi S}$

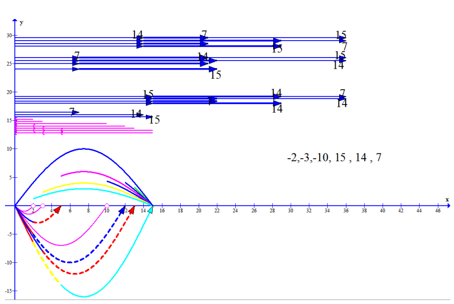
$$\Gamma(1-S) = \frac{2^{-S}\pi^{1-S}}{\cos\frac{\pi(1-S)}{2}}$$

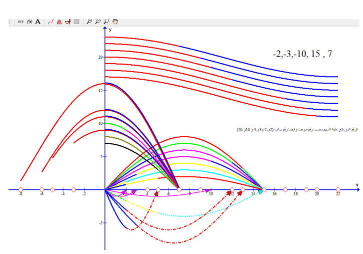


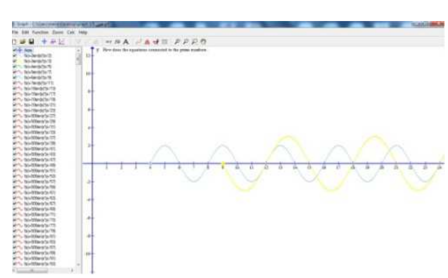
Compensation in the equation for the value(1-s) = s

$$\Gamma(S) = \frac{2^{S-1}\pi^{S}}{\cos\frac{\pi S}{2}}$$









Birch and Swinnerton-Dyer Conjecture

Mathematicians have always been fascinated by the problem of describing all solutions in whole numbers x,y,z to algebraic equations like

x2 + y2 = z2

Euclid gave the complete solution for that equation, but for more complicated equations this becomes extremely difficult.. When the solutions are the points of an abelian variety, the Birch and Swinnerton-Dyer conjecture asserts that the size of the group of rational points is related to the behavior of an associated zeta function ζ(s) near the point s=1. In particular this amazing conjecture asserts that if ζ(1) is equal to 0, then there are an infinite number of rational points (solutions), and conversely, if ζ(1) is not equal to 0, then there is only a finite number of such points

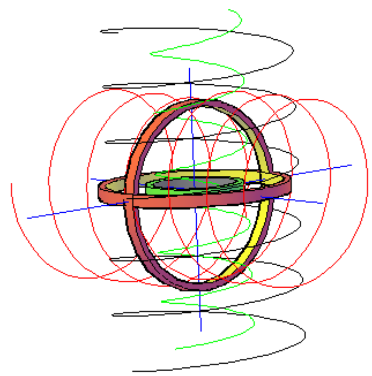
$Æ\,(S) = \frac{\sin \pi S}{2} = \zeta(S)$

$Æ\,(S) = \frac{1}{2}\sin \pi S = 0$ when s $= \pm\,(1,2,3,4,5,6,7,8, - - -\,-)$

$$\zeta(1) = 0$$

Hodge Conjecture

In the twentieth century mathematicians discovered powerful ways to investigate the shapes of complicated objects. The basic idea is to ask to what extent we can approximate the shape of a given object by gluing together simple geometric building blocks of increasing dimension. This technique turned out to be so useful that it got generalized in many different ways, eventually leading to powerful tools that enabled mathematicians to make great progress in cataloging the variety of objects they encountered in their investigations. Unfortunately, the geometric origins of the procedure became obscured in this generalization. In some sense it was necessary to add pieces that did not have any geometric interpretation. The Hodge conjecture asserts that for particularly nice types of spaces called projective algebraic varieties, the pieces called Hodge cycles are actually (rational linear) combinations of geometric pieces called algebraic cycles.



The Hodge conjecture asserts that for particularly nice types of spaces called projective algebraic varieties, the pieces called Hodge cycles are actually (rational linear) combinations of

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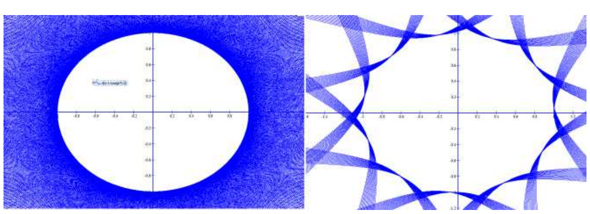
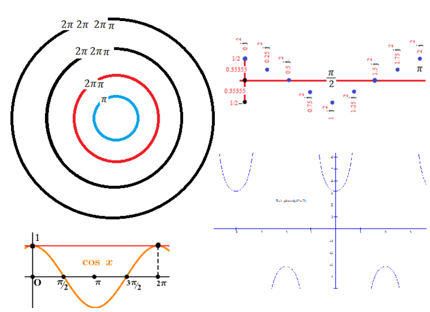
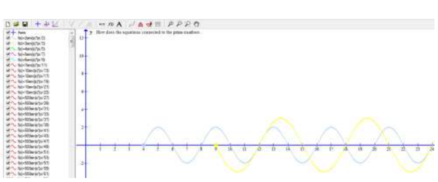
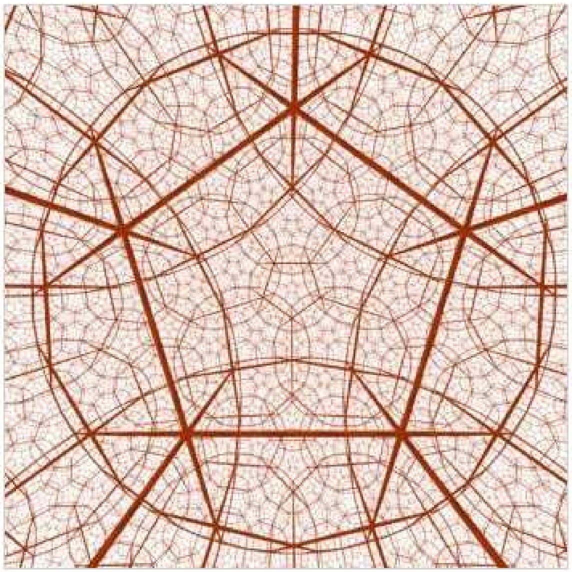






Poincaré Conjecture



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.

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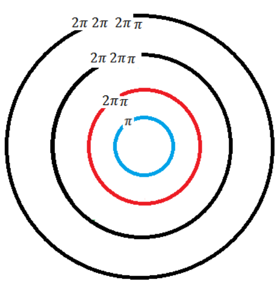
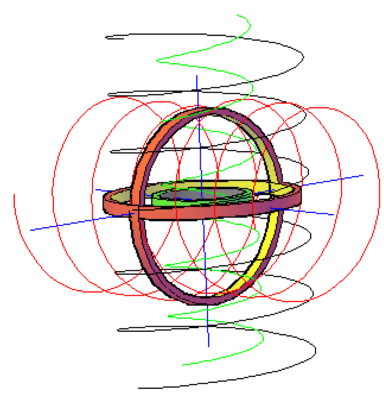
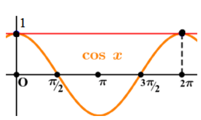
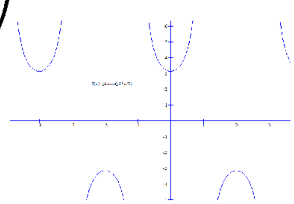
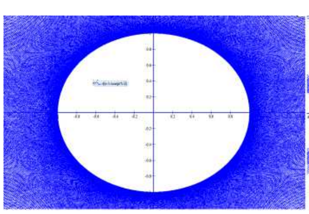
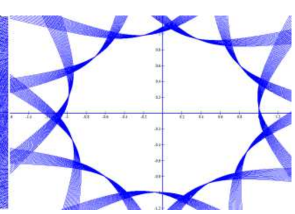


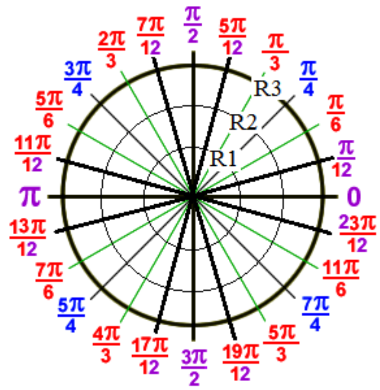








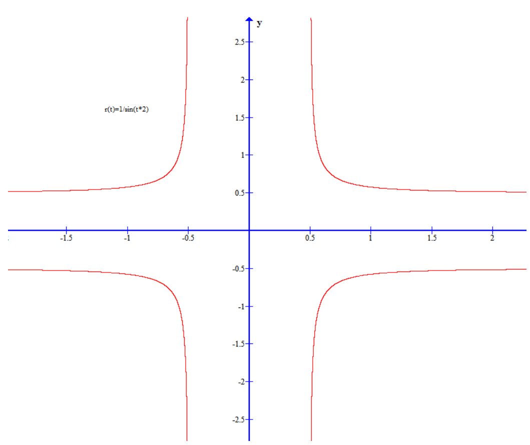




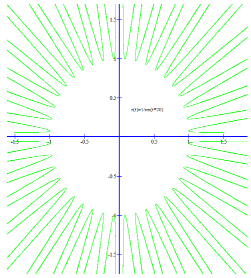
ã(s)ã(1-s) = r/ sin ts

ɛ(s)ɛ(1-s) = r* sin ts

Equation=R	r	s	t	R
r/ sin ts	1	2	0	
		2	Pi/12	1/sin(180/12*2)=2
		2	2Pi/12	1/sin(2*180/12*2)=1.154700538
		2	3Pi/12	1/sin(3*180/12*2)=1
		2	4Pi/12	1.154700538
		2	5pi/12	2
		2	6Pi/12	
		2	7pi/12	-2
		2	8pi/12	-1.154700538
		2	9pi/12	-1
		2	10pi/12	-1.154700538
		2	11pi/12	-2
		2	12Pi/12	
		2	13pi/12	2
		2	14pi/12	1.154700538
		2	15pi/12	1
		2	16pi/12	1.154700538
		2	17pi/12	2
		2	18pi/12	
		2	19pi/12	-2
		2	20pi/12	-1.154700538
		2	21pi/12	-1
		2	22pi/12	-1.154700538
		2	23pi/12	-2

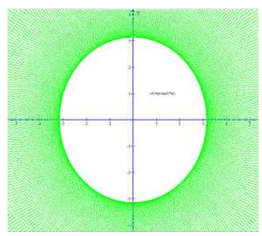


s=20



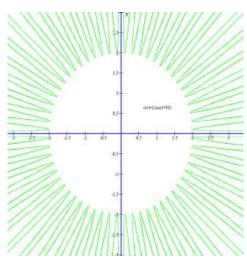
s=π, r=π

ã(s)ã(1-s) =pi/ sin t π



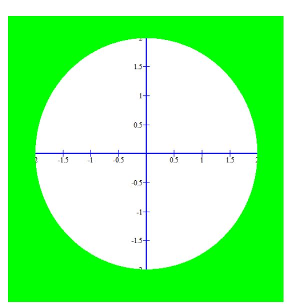
s=30, r=2

ã(s)ã(1-s) =2/ sin t30



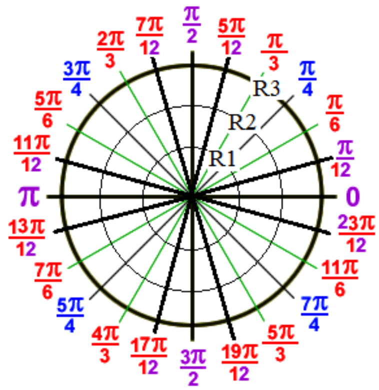
ã(s)ã(1-s) =r/ sin ts

In equation, r is the radius and S is the number of points of semicircle.
Any circle is a set ofdots adjacent with each other.
When the s points are adjacent, a circle results.
This circle is a measure of any spherical shape.



ã(s)ã(1-s) =1/ sin(t*1000000)

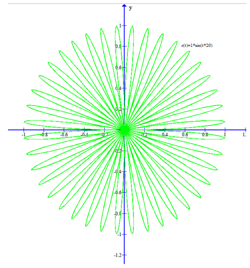
Any shape is brought, let it to be a ball.
The ball is split into slices and each slice is made up of adjacent points.
Each slice has adjacent points and a diameter starting from zero
   If all points of the ball slices match with the adjacent circle points
This indicates that the shape is spherical
   If all the points of the ball slices don’t match with the adjacent circle points
This indicates that the shape is not spherical
This can be done by looking at their position on the drawing

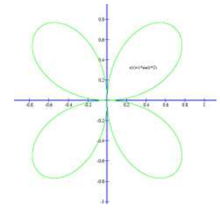


$\xi(s)\xi(1\text{-}s) = r^* \sin ts$

Equation=R	r	s	t	R
r* sin ts	1	2	0	0
		2	Pi/12	1*sin(180/12*2)=0.5
		2	2Pi/12	1*sin(2*180/12*2)=0.8660254038
		2	3Pi/12	1*sin(3*180/12*2)=1
		2	4Pi/12	0.8660254038
		2	5pi/12	0.5
		2	6Pi/12	0
		2	7pi/12	-0.5
		2	8pi/12	-0.8660254038
		2	9pi/12	-1
		2	10pi/12	-0.8660254038
		2	11pi/12	-0.5
		2	12Pi/12	0
		2	13pi/12	0.5
		2	14pi/12	0.8660254038
		2	15pi/12	1
		2	16pi/12	0.8660254038
		2	17pi/12	0.5
		2	18pi/12	0
		2	19pi/12	-0.5
		2	20pi/12	-0.8660254038
		2	21pi/12	-1
		2	22pi/12	-0.8660254038
		2	23pi/12	-o.5

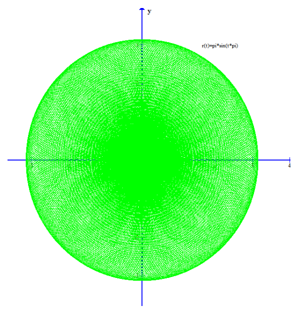
s=20





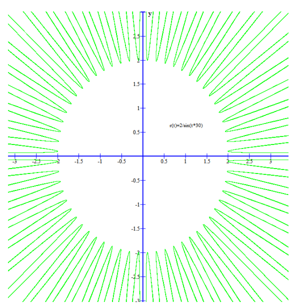
s=pi, r=pi

ξ(s)ξ(1-s) =pi* sin tpi



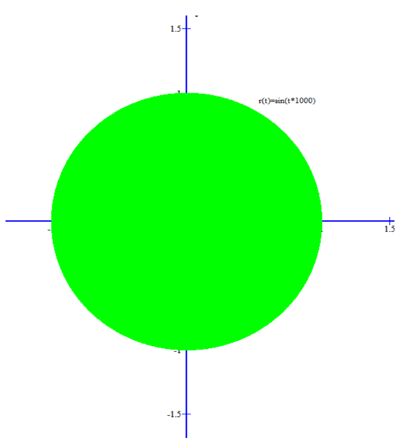
s=30, r=2

ξ(s)ξ(1-s) =2* sin t30

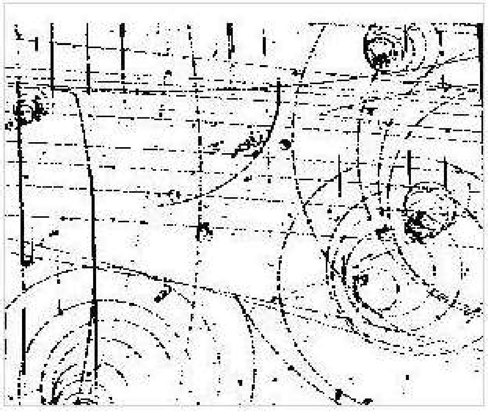


ξ(s)ξ(1-s) =R1=r* sin ts

ã(s)ã(1-s) =1/ sin(t*1000000)



Yang–Mills and Mass Gap



The laws of quantum physics stand to the world of elementary particles in the way that Newton's laws of classical mechanics stand to the macroscopic world. Almost half a century ago, Yang and Mills introduced a remarkable new framework to describe elementary particles using structures that also occur in geometry. Quantum Yang-Mills theory is now the foundation of most of elementary particle theory, and its predictions have been tested at many experimental laboratories, but its mathematical foundation is still unclear. The successful use of Yang-Mills theory to describe the strong interactions of elementary particles depends on a subtle quantum mechanical property called the "mass gap": the quantum particles have positive masses, even though the classical waves travel at the speed of light. This property has been discovered by physicists from experiment and confirmed by computer simulations, but it still has not been understood from a theoretical point of view. Progress in establishing the existence of the Yang-Mills theory and a mass gap will require the introduction of fundamental new ideas both in physics and in mathematics.

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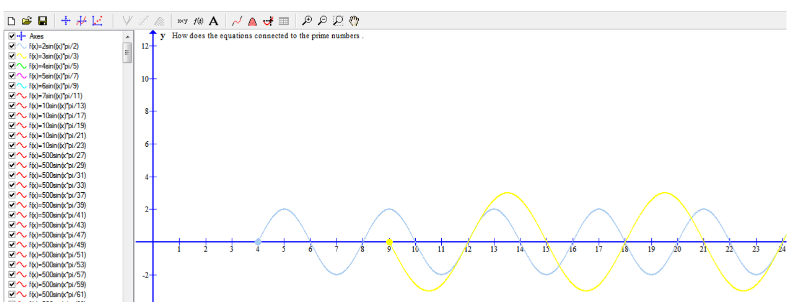
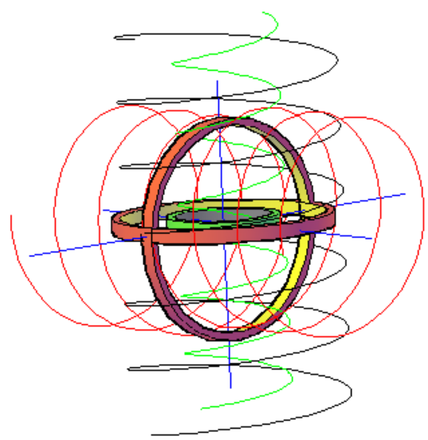
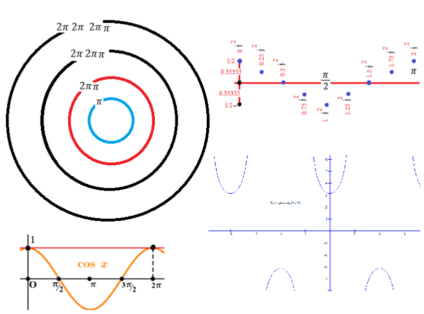
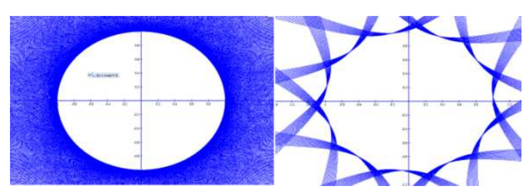
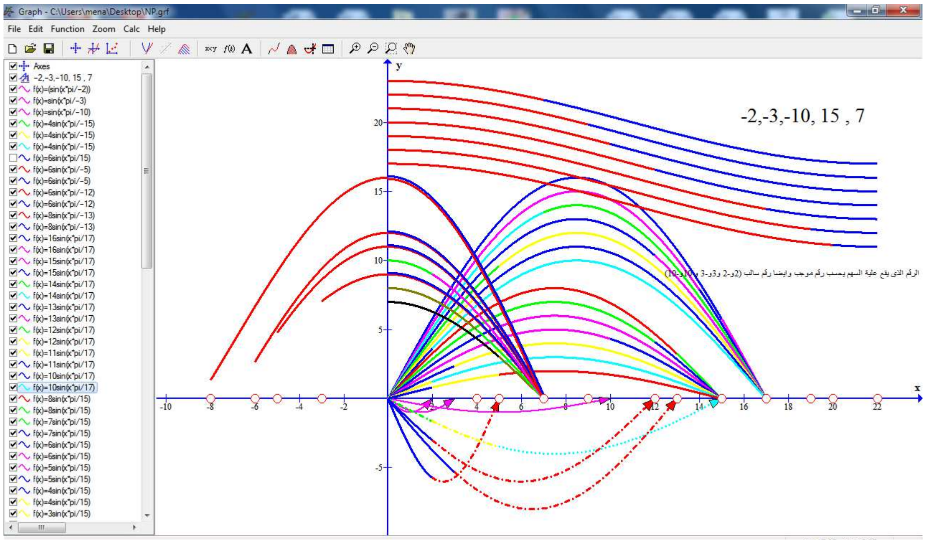


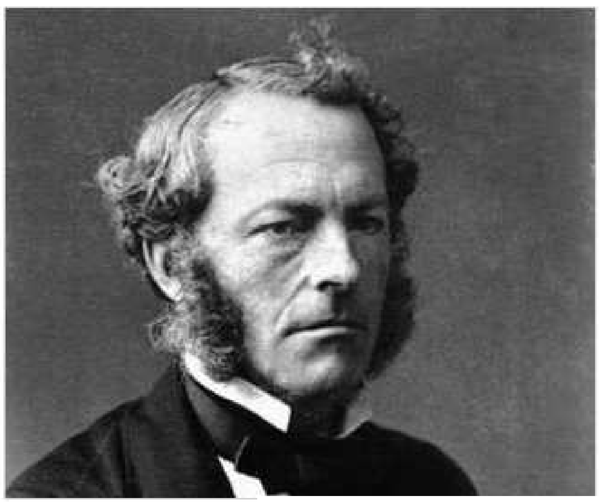








Navier–Stokes Equation



Waves follow our boat as we meander across the lake, and turbulent air currents follow our flight in a modern jet. Mathematicians and physicists believe that an explanation for and the prediction of both the breeze and the turbulence can be found through an understanding of solutions to the Navier-Stokes equations. Although these equations were written down in the 19th Century, our understanding of them remains minimal. The challenge is to make substantial progress toward a mathematical theory which will unlock the secrets hidden in the Navier-Stokes equations.

Navier–Stokes momentum equation (*convective form*)

$$\rho\left(\frac{\partial \mathbf{u}}{\partial t} + \mathbf{u}\cdot\nabla\mathbf{u}\right) = -\nabla\bar{p} + \mu\,\nabla^2\mathbf{u} + \tfrac{1}{3}\mu\,\nabla(\nabla\cdot\mathbf{u}) + \rho\mathbf{g}.$$

The above equation can also be written in the form

Navier–Stokes momentum equation (*convective form*)

$$\rho\frac{D\mathbf{u}}{Dt} = -\nabla\bar{p} + \mu\,\nabla^2\mathbf{u} + \tfrac{1}{3}\mu\,\nabla(\nabla\cdot\mathbf{u}) + \rho\mathbf{g}.$$

The effect of the volume viscosity ζ is that the mechanical pressure is not equivalent to the thermodynamic pressure

$$\bar{p} \equiv p - \zeta\,\nabla\cdot\mathbf{u},$$

This difference is usually neglected, sometimes by explicitly assuming $\zeta = 0$, but it could have an impact in sound absorption and attenuation and shock waves.

$\zeta(S) = \dfrac{Sin\ \pi s}{2}$ Rad $\sin \pi s = 0$ Rad , when S = ±(1,2,3,4,----)

$$\zeta(S) = 0$$