

## Top Mathematicians

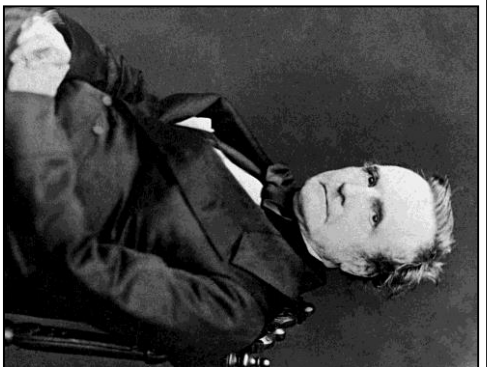
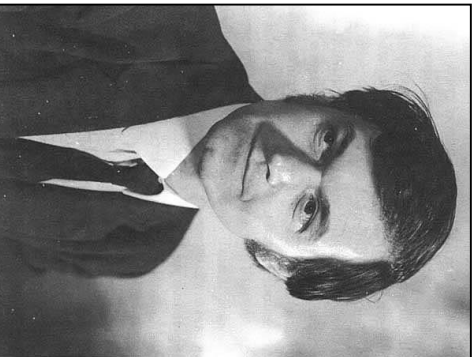
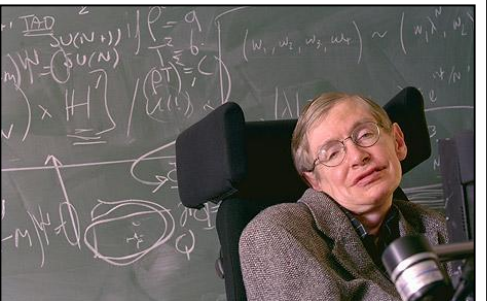
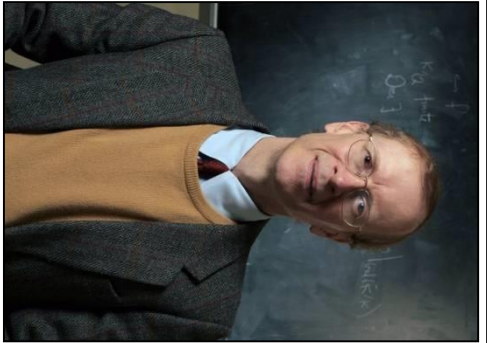
This file contains two separate sets of:

- Pictures
- Names
- Dates
- “Something about the person”
- “Most famous for”
- “Something else I should know”.

Set 1 is cards 2 – 7, set 2 is cards 8 – 13.

Print off each set of pictures on white card, print off each set of text on a light coloured card; one shade for set 1, another for set 2.

The cards are aligned here; names, dates, pictures and text all match up as laid out here.



Andrew  
Wiles

Sir Isaac  
Newton

Alan  
Turing

Most  
Famous  
For...

Stephen  
Hawking

Blaise  
Pascal

Roger  
Penrose

Something  
About the  
Person...

Charles  
Babbage

Srinivasa  
Ramanujan

Kurt  
Godel

Something  
Else I Should  
Know...

1953 -

1642 -  
1727

1912 -  
1954

Who

1942 -

1623 -  
1666

1931 -

When

1791 -  
1871

1887 -  
1920

1906 -  
1978

### Something About the Person...

Born in Cambridge and attended Kings College, Cambridge. He was a Royal Society research professor and currently works at Princeton University, New Jersey, USA.

### Something About the Person ...

When not working on mathematics and science, this person was an alchemist and enjoyed studying the occult. He died in his sleep and is buried in Westminster Cathedral.

### Something About the Person ...

It is commonly believed that this person committed suicide by cyanide poisoning following depression as a consequence of undergo chemical castration via injections to suppress his homosexuality which was illegal in the UK at the time.

### Something About the Person ...

Since age 21, whilst studying at the University of Cambridge, suffered from motor neurone disease and uses a computer to synthesise speech. In 2007 he experienced the weightlessness of zero-gravity during eight dives of the 'vomit comet' airplane.

### Something About the Person ...

From the age of 18 onwards this person suffered from poor health and was almost always ill in some way, believing it natural and necessary to suffer. He died aged just 39.

### Something About the Person ...

Born in Colchester, England and studied Mathematics at University College, London and later earned a PhD at Cambridge. In 1972 he was elected as a fellow of the Royal Society, the leading and one of the oldest and most famous scientific societies in existence. He currently works at the Mathematical Institute at University of Oxford.

### Something About the Person ...

An English mathematician, mechanical engineer, inventor and philosopher. This person was one of the founding members of the Royal Astronomical Society. He was Lucasian Professor of Mathematics at University of Cambridge from 1828 - 1839, a seat previously held by Sir Isaac Newton and later held by Stephen Hawking.

### Something About the Person ...

Born, grew up and educated in India. As his work came to the attention of mathematicians in England he was invited to the UK to work at the University of Cambridge alongside Hardy and Littlewood. He remained at Cambridge for 5 years but moved back to India due to ongoing health problems and died just one year later.

### Something About the Person ...

Logician and mathematician who worked mainly on 'set theory', the study of sets (of numbers, shapes). Born in Austria, after the Nazis arrived in 1933 he travelled to and later settled in America where he became good friends with Albert Einstein and worked at the Institute of Advanced Studies at University of Princeton.

### Most Famous For...

Being the man who, after several hundred years of its eluding mathematicians, proved 'Fermat's Last Theorem'; that there are no integer solutions of the equation  $x^n+y^n=z^n$ , where  $n>2$  (essentially an extension of Pythagoras' theorem to powers above 2).

### Most Famous For...

The laws of gravity. Supposedly whilst sitting under a tree an apple fell on his head and from this he was inspired to formulate the formula for gravity.

### Most Famous For...

Cracking the German WWII Enigma machine codes at the Government Code and Cipher School, Bletchley Park (near Milton Keynes).

### Most Famous For...

Being a theoretical physicist who has developed several theories concerning gravitational singularities, the big bang, black holes and 'Hawking radiation'. He is the author of several books including the best seller 'A Brief History of Time'.

### Most Famous For...

A Frenchman, this person is most known for the triangle that bears his name and which is primarily a method for producing the binomial coefficients but also encapsulates a great many other sequences and mathematical oddities.

### Most Famous For...

His work on 'Penrose Tilings' which are non-repeating (non-translational) patterns that exhibit various other symmetrical properties. The 'Penrose Triangle' is said to be the inspiration for Escher's Waterfall picture.

### Most Famous For...

Plans for constructing mechanical 'Difference Engines', said to be the concept behind the worlds first programmable (albeit mechanical) computer. These would, for the first time ever, replace humans as the computer - 'one who computes' - with a machine. The significance having been identified by this person that humans make mistakes whereas machines would not.

### Most Famous For...

His ability rather than for any particular achievement. Having been taught no formal mathematics this persons work displayed unusual style & flair and he made a great many small but significant contributions to number theory and mathematical analysis.

### Most Famous For...

His 'Incompleteness Theorems' of which there are two. One key area of this work is the 'axiom of choice' ("the product of a collection of non-empty sets is non-empty") upon which many other important mathematical proofs depend.

### Something Else I Should Know...

Also proved the 'Taniyama–Shimura Conjecture' (which in turn proved Fermat's Last Theorem) and has worked on 'elliptic curves' and 'modular forms'. His initial proof of Fermat's Last Theorem, in 1993, contained a mistake but, after several further years of work, corrected it and the proof was complete.

### Something Else I Should Know...

Was actually a mathematician and not a scientist as many believe. His mathematical techniques of 'calculus' form a significant majority of A Level Maths. He is also famous for his 'Laws of Motion', work on astronomy, showing that white light can be split into colours of the electromagnetic spectrum and his book, the 'Philosophiæ Naturalis Principia Mathematica'.

### Something Else I Should Know...

Studied Mathematics at Kings College, Cambridge and is credited with proposing the first theoretical computing devices through his paper 'On Computable Numbers'. He invented the theoretical 'Turing Machines' for performing any mathematical computation and the real 'Bombe' machines for cracking the Enigma codes.

### Something Else I Should Know...

From 1979 - 2009, held the seat of 'Lucasian Professor of Mathematics' at University of Cambridge, a position once held by Sir Isaac Newton.

### Something Else I Should Know...

Aged just 16 wrote his first work of Mathematics. A document so good for such an age that Descartes believed it to be the work of his father. Later in life this person corresponded with Pierre de Fermat (of Fermat's Last Theorem, see Andrew Wiles) on theoretical gambling questions and from this became the topic of probability theory.

### Something Else I Should Know...

Proved that singularities (black holes) could be formed by dying stars and this work was later extended by Hawking to prove the 'Penrose-Hawking Singularity Theorems'. In 1975 he and Hawking were jointly awarded the Eddington medal of the Royal Astronomical Society and in 1988 the Wolf Foundation prize for Physics.

### Something Else I Should Know...

In 1824 was awarded the Royal Society's 'Gold Medal' for invention of an engine to calculate mathematical and astronomical tables. In cryptography he broke the 'Vigenère' cipher and 'Vigenère's Autokey cipher and, in a completely different field, also invented the 'pilot' or 'cow catcher'; an attachment for the front of trains to clear the tracks of obstacles.

### Something Else I Should Know...

One of the best known stories of this person relates to his reaction upon hearing his colleague Hardy describe a taxicab number 1729 as "rather uninteresting", to which this person instantly replied that it is in fact very interesting as the smallest number representable as the sum of two positive cubes;  $1^3+12^3=9^3+10^3$ .

### Something Else I Should Know...

Also worked on ideas of 'computability' and the theory of time travel, which caused Einstein to have doubts over his own theory of relativity.





David  
Hilbert

Leonardo  
Fibonacci

Sir Tim  
Berners-Lee

Most  
Famous  
For...

Bernhard  
Riemann

Pythagoras  
of Samos

Euclid

Something  
About the  
Person...

Rene  
Descartes

Leonard  
Euler

Carl  
Gauss

Something  
Else I Should  
Know...

1862 -  
1943

1170 -  
1250

1955 -

Who

1826 -  
1866

570BC -  
495BC

Around  
300BC

When

1596 -  
1650

1707 -  
1783

1777 -  
1855

### Something About the Person...

Studied at the University of Königsberg (of the famous 'Königsberg Bridges' problem), East Prussia (now Germany). This person was later a professor there before becoming 'Chairman of Mathematics' at the University of Göttingen. Shortly after retirement the Nazi's effectively stopped mathematics at Göttingen when they drove out many of its leading members to replace them with a non-Jewish staff.

### Something About the Person ...

An Italian Mathematician and a man of many names; Leonardo Pisano Bigollo, Leonardo of Pisa, Leonardo Pisano, Leonardo Filius Bonacci and finally that by which he is best known. He travelled throughout the Mediterranean area learning mathematics from Arab mathematicians before returning to Pisa to publish his book, the Liber Abaci, aged 32.

### Something About the Person ...

A British computer scientist currently working at MIT but was working at CERN, France when the first website was built. He was knighted by Queen Elizabeth in 2004 for his pioneering work in computer science.

### Something About the Person ...

A German mathematician who studied at the University of Göttingen initially under supervision of Carl Gauss. He fled Göttingen due to fighting between armies of Hanover and Prussia and died in Italy of tuberculosis.

### Something About the Person ...

In his later years the brotherhood of this person was suppressed and persecuted. Various accounts of his death include perishing in a fire and starving himself to death.

### Something About the Person ...

Greek mathematician who lived and worked in Alexandria during the reign of Ptolemy I. Little else is known about him including his birth and death dates (although from some references they can be estimated) nor exist any pictures, statues or painting of him. Therefore, any images that claim to represent him cannot be relied upon.

### Something About the Person ...

A French philosopher (the 'father of modern philosophy'), mathematician and writer. This person died of pneumonia whilst in Sweden having been invited to tutor Queen Christina of Sweden. It is said that, as someone who often stayed in bed working until noon, the early morning study session demands of Queen Christina may have contributed to his death.

### Something About the Person ...

Following a fever this person became blind in his right eye then almost blind in his left eye after suffering a cataract but despite this he went on to produce mathematical papers more frequently than before. This person died of brain haemorrhage aged 76.

### Something About the Person ...

A child prodigy, and German mathematician who studied at the University of Göttingen. Whilst he didn't enjoy teaching he did tutor a few students including Bernhard Riemann. This person died at the University of Göttingen and is interred there.

### Most Famous For...

His publication of ten mathematical problems at the 'International Congress of Mathematics' in Paris, 1900, which were to greatly influence the study of mathematics throughout the 20th Century.

### Most Famous For...

The sequence named after him; 1,1,2,3,5,8... and the 'Golden Ratio' of 1.618 produced by dividing subsequent numbers in the sequence. The sequence and ratio appears in many areas as diverse as biology, nature, finance and even art.

### Most Famous For...

Being credited as the 'inventor' of the internet or world wide web in 1989/90 (although it was really a culmination of ideas created by many people since the 1960s).

### Most Famous For...

The 'Riemann Hypothesis' (conjecture) concerns the location of 'zeros' in the 'Riemann Zeta Function'. This relates to the distribution of prime numbers and attempts to find a rule for the sequence of prime numbers. The Riemann hypothesis was one of Hilbert's mathematical problems of 1900 and, still unsolved, it is also one the Clay Mathematics Millennium problems with a prize of \$1,000,000.

### Most Famous For...

This person's theorem;  $a^2+b^2=c^2$  which relates the lengths of sides of right angled triangles. This is the one mathematical theorem that everyone learns at high school, worldwide.

### Most Famous For...

Writing one of the most influential mathematics books ever, called 'The Elements'. In it he set out many of the definitions, rules and theorems of geometry (or 'Euclidean Geometry') which continue to be taught and used today.

### Most Famous For...

Cartesian Geometry; the x/y axes of a 2D coordinate plane (or x/y/z in the case of 3D) that we are all familiar with.

### Most Famous For...

Writing lots of the fundamental principles upon which geometry developed and for having many areas of maths named after him including 'Eulerian graphs' as studied in A Level Maths and 'Euler's formula' which connects vertices, edges and faces of a solid.

### Most Famous For...

The story of his method for quickly adding all the numbers between 1-100 and yet more beside, including his prime number theorem on the distribution of the primes ( $1/\ln(n)$ ) and his discovery that any integer can be written as the sum of, at most, 3 triangle numbers.

### Something Else I Should Know...

In similar fashion to this persons mathematical problems, at the turn of the millennium the 'Clay Mathematics Institute' published a series of seven mathematics problems each with a prize of \$1,000,000 for whomever solves them. As of 2012 six of the problems remain unsolved.

### Something Else I Should Know...

Aside from the sequence, is famed for spreading the Hindu-Arabic numeral system (ways of writing numbers) throughout Western Europe and it is upon this which our current number system is at least partly based.

### Something Else I Should Know...

Founded and is director of the WC3 (World Wide Web Consortium) which oversees development of the internet. In October 2009 this person admitted that the '//' in a web address is unnecessary but "seemed like a good idea at the time".

### Something Else I Should Know...

Worked on many other areas of mathematics including number theory, differential geometry and higher dimensions. He also founded the area of mathematics that became known as 'Riemann Geometry' upon which Einstein's theory of General Relativity is based.

### Something Else I Should Know...

Probably isn't directly responsible for the theorem that bears his name. He did however run a school of mathematics and religion but for political reasons this was burned down and the 'Pythagoreans' were forced to leave the city of Croton, Southern Italy.

### Something Else I Should Know...

Was often rightfully referred to as the 'Father of Geometry' but aside from geometry he worked on other areas of maths including the important proof that there are infinitely many prime numbers, the 'Fundamental Theorem of Arithmetic' and a 'Euclidean algorithm' for finding the highest common factor of two numbers.

### Something Else I Should Know...

Also invented the 'superscript' notation of writing expressions such as  $3^2$  or  $x^4$  as well as creating, in a more philosophical role, the phrase "I think therefore I am".

### Something Else I Should Know...

Has an equation named after him;  $e^{i\pi} = -1$  and even a number;  $e = 2.718$ .

### Something Else I Should Know...

Also an astronomer who accurately predicted the position of dwarf planets in the sky using conic sections (sections of cones) and worked on and refined the mathematics of the movement of the planets leading to the 'Gaussian Gravitational Constant'.