111 ΜΑΘΗΜΑ, τεταρτη, 31-05-2023,

111BioFermatDescartes.docx,

Webex meeting recording: 111 WEDNESDAY INM-20230531 0911-1

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ΠΡΟΚΑΤΑΡΚΤΙΚΑ,

Γρηγορη επαναληψη Viete bio

BIO των ΦΕΡΜΑ, ΚΑΡΤΕΣΙΟ,

Εξετασεις,

# ΑΝΑΛΥΤΙΚΗ ΓΕΩΜΕΤΡΙΑ, ANALYTIC GEOMETRY,

## Pierre de Fermat, BIO

### <https://en.wikipedia.org/wiki/Pierre_de_Fermat>,

Pierre de Fermat (French: [pjɛʁ də fɛʁma]; between 31 October and 6 December 1607[a] – 12 January 1665) was a French mathematician who is given credit for early developments that led to infinitesimal calculus, including his technique of adequality. In particular, he is recognized for his discovery of an original method of finding the greatest and the smallest ordinates of curved lines, which is analogous to that of differential calculus, then unknown, and his research into number theory. **He made notable contributions to analytic geometry**, probability, and optics. He is best known for his Fermat's principle for light propagation and his Fermat's Last Theorem in number theory, which he described in a note at the margin of a copy of Diophantus' Arithmetica. He was also a lawyer[3] at the Parlement of Toulouse, France.

ΣΓΠ. ΜΑΖΥ με τον ΚΑΡΤΕΣΙΟ, είναι οι κυριοι θεμελιωτες της ΑΝΑΛΥΤΙΚΗΣ ΓΕΩΜΕΤΡΙΑΣ.

#### Biography

Fermat was born in 1607 in **Beaumont-de-Lomagne**, France—the late 15th-century mansion where Fermat was born is now a museum. He was from Gascony, where his father, Dominique Fermat, **was a wealthy leather merchant** and served three one-year terms as one of the four consuls of Beaumont-de-Lomagne. His mother was Claire de Long.[2] Pierre had one brother and two sisters and was almost certainly brought up in the town of his birth.[citation needed]

He attended the University of Orléans from 1623 and received a bachelor in civil law in 1626, before moving to Bordeaux. In Bordeaux, he began his first serious mathematical researches, and in 1629 he gave a copy of his restoration of **Apollonius's De Locis Planis** to one of the mathematicians there. Certainly, in Bordeaux he was in contact with Beaugrand and during this time he produced important work on maxima and minima which he gave to Étienne d'Espagnet who clearly shared mathematical interests with Fermat. **There he became much influenced by the work of François Viète**.[4]

In 1630, **he bought the office of** a councilor at the **Parlement de Toulouse**, one of the High Courts of Judicature in France, and was sworn in by the Grand Chambre in May 1631. **He held this office for the rest of his life.** Fermat thereby became entitled to change his name from Pierre Fermat to Pierre de Fermat. On 1 June 1631, Fermat married Louise de Long, a fourth cousin of his mother Claire de Fermat (née de Long). The Fermats had eight children, five of whom survived to adulthood: Clément-Samuel, Jean, Claire, Catherine, and Louise.[5][6][7]

SGP. COLBERT,

ΣΓΠ. Τοπος γεννησης Beaumont-de-Lomagne

Fluent in six languages (French, Latin, Occitan, classical Greek, Italian and Spanish), Fermat was praised for his written verse in several languages and his **advice was eagerly sought regarding the emendation** ((editorial change, correction),**), of Greek texts**. He communicated most of his work in letters to friends, often with little or no proof of his theorems. In some of these letters to his friends, he explored many of the fundamental ideas of calculus before Newton or Leibniz. Fermat was a trained lawyer **making mathematics more of a hobby than a profession.** Nevertheless, he made important contributions to analytical geometry, probability, number theory and calculus.[8] Secrecy was common in European mathematical circles at the time. This naturally led to priority disputes with contemporaries such as Descartes and Wallis.[9]

Anders Hald writes that, **"The basis of Fermat's mathematics was the classical Greek treatises combined with Vieta's new algebraic methods**."[10]

#### Work Pierre de Fermat

The 1670 edition of Diophantus's Arithmetica includes Fermat's commentary, referred to as his "Last Theorem" (Observatio Domini Petri de Fermat), posthumously published by his son

**Fermat's pioneering work in analytic geometry (Methodus ad disquirendam maximam et minimam et de tangentibus linearum curvarum) was circulated in manuscript form in 1636** (based on results achieved in 1629),[11] **predating the publication of Descartes' famous La géométrie (1637), which exploited the work.[**12] This manuscript was published posthumously in 1679 in Varia opera mathematica, as Ad Locos Planos et Solidos Isagoge (Introduction to Plane and Solid Loci).[13]

In Methodus ad disquirendam maximam et minimam and in De tangentibus linearum curvarum, Fermat developed a method (adequality) for determining maxima, minima, and tangents to various curves that was equivalent to differential calculus.[14][15] In these works, Fermat obtained a technique for finding the centers of gravity of various plane and solid figures, which led to his further work in quadrature.

**Fermat was the first person known to have evaluated the integral of general power functions.** With his method, he was able to reduce this evaluation to the sum of geometric series (ΣΓΠ ε όχι και ΓΕΩΜΕΤΡΙΚΕΣ!). .[16] **The resulting formula was helpful to Newton, and then Leibniz,** when they independently developed the fundamental theorem of calculus.[citation needed]

In number theory, Fermat studied Pell's equation, perfect numbers, amicable numbers and what would later become Fermat numbers. It was while researching perfect numbers that he discovered Fermat's little theorem. He invented a factorization method—Fermat's factorization method—and popularized the proof by infinite descent, which he used to prove Fermat's right triangle theorem which includes as a corollary Fermat's Last Theorem for the case n = 4. Fermat developed the two-square theorem, and the polygonal number theorem, which states that each number is a sum of three triangular numbers, four square numbers, five pentagonal numbers, and so on.

Although Fermat claimed to have proven all his arithmetic theorems, few records of his proofs have survived. Many mathematicians, including Gauss, doubted several of his claims, especially given the difficulty of some of the problems and the limited mathematical methods available to Fermat. **His famous Last Theorem was first discovered by his son in the margin in his father's copy of an edition of Diophantus,** and included the statement that the margin was too small to include the proof. It seems that he had not written to Marin Mersenne about it**. It was first proven in 1994, by Sir Andrew Wiles, using techniques unavailable to Fermat**.[citation needed]

Through their correspondence in 1654, **Fermat and Blaise Pascal helped** lay the foundation for the theory of probability. From this brief but productive collaboration on the problem of points, they are now regarded as joint founders of probability theory.[17] Fermat is credited with carrying out the first-ever rigorous probability calculation. In it, he was asked by a professional gambler why if he bet on rolling at least one six in four throws of a die he won in the long term, whereas betting on throwing at least one double-six in 24 throws of two dice resulted in his losing. Fermat showed mathematically why this was the case.[18]

The first variational principle in physics was articulated by Euclid in his Catoptrica. It says that, for the path of light reflecting from a mirror, the angle of incidence equals the angle of reflection. Hero of Alexandria later showed that this path gave the shortest length and the least time.[19] Fermat refined and generalized this to "light travels between two given points along the path of shortest time" now known as the principle of least time.[20] For this, Fermat is recognized as a key figure in the historical development of the fundamental principle of least action in physics. The terms Fermat's principle and Fermat functional were named in recognition of this role.[21]

## RENE DES DESCARTES,

### <https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes>,

**René Descartes** ([/deɪˈkɑːrt/](https://en.wikipedia.org/wiki/Help:IPA/English) or [UK](https://en.wikipedia.org/wiki/British_English): [/ˈdeɪkɑːrt/](https://en.wikipedia.org/wiki/Help:IPA/English); French: [[ʁəne dekaʁt]](https://en.wikipedia.org/wiki/Help:IPA/French) ([https://upload.wikimedia.org/wikipedia/commons/thumb/8/8a/Loudspeaker.svg/11px-Loudspeaker.svg.png](https://en.wikipedia.org/wiki/File:LL-Q150_(fra)-GrandCelinien-Descartes.wav)[listen](https://upload.wikimedia.org/wikipedia/commons/a/ac/LL-Q150_%28fra%29-GrandCelinien-Descartes.wav)); [Latinized](https://en.wikipedia.org/wiki/Latinisation_of_names): **Renatus Cartesius**;[[note 3]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-19)[[17]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-longman-20) 31 March 1596 – 11 February 1650)[[18]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-21)[[19]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-22)[[20]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-23): 58 was a [French philosopher](https://en.wikipedia.org/wiki/French_philosophy), [scientist](https://en.wikipedia.org/wiki/Scientist), and [mathematician](https://en.wikipedia.org/wiki/Mathematician), widely considered a seminal figure in the emergence of [modern philosophy](https://en.wikipedia.org/wiki/Modern_philosophy) and [science](https://en.wikipedia.org/wiki/Modern_science). Mathematics was central to his method of inquiry, and he connected the previously separate fields of [geometry](https://en.wikipedia.org/wiki/Geometry) and [algebra](https://en.wikipedia.org/wiki/Algebra) into [analytic geometry](https://en.wikipedia.org/wiki/Analytic_geometry). Descartes spent much of his working life in the [Dutch Republic](https://en.wikipedia.org/wiki/Dutch_Republic), initially serving the [Dutch States Army](https://en.wikipedia.org/wiki/Dutch_States_Army), later becoming a central intellectual of the [Dutch Golden Age](https://en.wikipedia.org/wiki/Dutch_Golden_Age).[[21]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-24) Although he served a [Protestant state](https://en.wikipedia.org/wiki/Dutch_Reformed_Church) and was later counted as a [Deist](https://en.wikipedia.org/wiki/Deism) by critics, Descartes was [Roman Catholic](https://en.wikipedia.org/wiki/Roman_Catholicism).[[22]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-25)[[23]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-26)

### Early life

The house where Descartes was born in [La Haye en Touraine](https://en.wikipedia.org/wiki/Descartes,_Indre-et-Loire)

René Descartes was born in [La Haye en Touraine](https://en.wikipedia.org/wiki/Descartes,_Indre-et-Loire), [Province of Touraine](https://en.wikipedia.org/wiki/Touraine) (now [Descartes](https://en.wikipedia.org/wiki/Descartes,_Indre-et-Loire), [Indre-et-Loire](https://en.wikipedia.org/wiki/Indre-et-Loire)), France, on 31 March 1596.[[28]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-:2-33) René Descartes was conceived about halfway through August 1595. His mother, Jeanne Brochard, died a few days after giving birth to a still-born child in May 1597.[[29]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-34)[[28]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-:2-33) Descartes' father, Joachim, was a member of the [Parlement of Brittany](https://en.wikipedia.org/wiki/Parlement_of_Brittany) at [Rennes](https://en.wikipedia.org/wiki/Rennes).[[30]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-35): 22 René lived with his grandmother and with his great-uncle. **Although the Descartes family was Roman Catholic, the** [**Poitou**](https://en.wikipedia.org/wiki/Poitou) **region was controlled by the Protestant** [**Huguenots**](https://en.wikipedia.org/wiki/Huguenots).[[31]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-36) In **1607, late because of his fragile health, he entered the** [**Jesuit**](https://en.wikipedia.org/wiki/Jesuit)[**Collège Royal Henry-Le-Grand**](https://en.wikipedia.org/wiki/Coll%C3%A8ge_Royal_Henry-Le-Grand) **at** [**La Flèche**](https://en.wikipedia.org/wiki/La_Fl%C3%A8che)**,**[**[32]**](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-37)[**[33]**](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-38) where he was introduced to mathematics and physics, including [Galileo](https://en.wikipedia.org/wiki/Galileo)'s work.[[34]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-:3-39)[[35]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-40) While there, Descartes first encountered hermetic mysticism. After graduation in 1614, he studied for two years (1615–16) at **the** [**University of Poitiers**](https://en.wikipedia.org/wiki/University_of_Poitiers)**, earning a** [***Baccalauréat***](https://en.wikipedia.org/wiki/Baccalaur%C3%A9at) **and** [***Licence***](https://en.wikipedia.org/wiki/Licentiate_(degree)) **in** [**canon**](https://en.wikipedia.org/wiki/Canon_law) **and** [**civil law**](https://en.wikipedia.org/wiki/Civil_law_(legal_system)) **in 1616,**[**[34]**](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-:3-39) in accordance with his father's wishes that he should become a lawyer.[[36]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-41) From there, he moved to Paris.

In [*Discourse on the Method*](https://en.wikipedia.org/wiki/Discourse_on_the_Method), Descartes recalls:[[37]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-42): 20–21

In accordance with his ambition to become a professional military officer in 1618, Descartes joined, as a [mercenary](https://en.wikipedia.org/wiki/Mercenary), the [**Protestant**](https://en.wikipedia.org/wiki/Protestant)[**Dutch States Army**](https://en.wikipedia.org/wiki/Dutch_States_Army) in [Breda](https://en.wikipedia.org/wiki/Breda) under the command of [Maurice of Nassau](https://en.wikipedia.org/wiki/Maurice_of_Nassau),[[34]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-:3-39) and undertook a formal study of [military engineering](https://en.wikipedia.org/wiki/Military_engineering), as established by [Simon Stevin](https://en.wikipedia.org/wiki/Simon_Stevin).[[38]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-:7-43): 66 Descartes, therefore, received much encouragement in Breda to advance his knowledge of mathematics.[[34]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-:3-39)

While in the service of the [Catholic](https://en.wikipedia.org/wiki/Catholic) Duke [Maximilian of Bavaria](https://en.wikipedia.org/wiki/Maximilian_I,_Elector_of_Bavaria) from 1619,[[41]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-46) Descartes was present at the [Battle of the White Mountain](https://en.wikipedia.org/wiki/Battle_of_the_White_Mountain) near [Prague](https://en.wikipedia.org/wiki/Prague), in November 1620.[[42]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-47)[[43]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-48)

### France

In 1620, Descartes left the army. He visited Basilica della Santa Casa in Loreto, then visited various countries before returning to France, and during the next few years, he spent time in Paris. It was there that he composed his first essay on method**: Regulae ad Directionem Ingenii (Rules for the Direction of the Mind)**.[40] He arrived in La Haye in 1623, **selling all of his property to invest in bonds, which provided a comfortable income for the rest of his life**.[38]: 132 [49]: 94  Descartes was present at **the siege of La Rochelle by Cardinal Richelieu in 1627**.[49]:

SGP. FERMAT, d ARTANIAN.

### Netherlands

**Descartes returned to the** [**Dutch Republic**](https://en.wikipedia.org/wiki/Dutch_Republic) **in 1628.**[**[45]**](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-:4-50) **In April 1629, he joined the** [**University of Franeker**](https://en.wikipedia.org/wiki/University_of_Franeker)**, studying under** [**Adriaan Metius**](https://en.wikipedia.org/wiki/Adriaan_Metius), either living with a Catholic family or renting the [Sjaerdemaslot](https://en.wikipedia.org/wiki/Sjaerdemaslot). The next year, under the name "Poitevin", he enrolled at [Leiden University](https://en.wikipedia.org/wiki/Leiden_University), which at the time was a Protestant University.[[52]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-57) He studied both mathematics with [Jacobus Golius](https://en.wikipedia.org/wiki/Jacobus_Golius), who confronted him with [Pappus's hexagon theorem](https://en.wikipedia.org/wiki/Pappus%27s_hexagon_theorem), and [astronomy](https://en.wikipedia.org/wiki/Astronomy) with [Martin Hortensius](https://en.wikipedia.org/wiki/Martin_van_den_Hove).[[53]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-58) In October 1630, he had a falling-out with Beeckman, whom he accused of plagiarizing some of his ideas. **In Amsterdam, he had a relationship with a servant girl, Helena Jans van der Strom, with whom he had a daughter,** [**Francine**](https://en.wikipedia.org/wiki/Francine_Descartes)**, who was born in 1635 in** [**Deventer**](https://en.wikipedia.org/wiki/Deventer)**. She was baptized a Protestant[[54]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes" \l "cite_note-59)**[**[55]**](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-60) **and died of scarlet fever at the age of 5.**

**Despite frequent moves,[[note 6]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes" \l "cite_note-65) he wrote all of his major work during his 20-plus years in the Netherlands, initiating a revolution in mathematics and philosophy**.[[note 7]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-66) In 1633, Galileo was condemned by the [Italian Inquisition](https://en.wikipedia.org/wiki/Italian_Inquisition), and Descartes abandoned plans to publish [*Treatise on the World*](https://en.wikipedia.org/wiki/The_World_(Descartes)), his work of the previous four years. **Nevertheless, in 1637, he published parts of this work in three essays:**[**[60]**](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-:5-67) **"Les Météores" (The Meteors), "**[**La Dioptrique**](https://en.wikipedia.org/wiki/Dioptrique)**" (Dioptrics) and** [***La Géométrie***](https://en.wikipedia.org/wiki/La_G%C3%A9om%C3%A9trie) **(*Geometry*), preceded by an introduction, his famous *Discours de la méthode* (**[***Discourse on the Method***](https://en.wikipedia.org/wiki/Discourse_on_the_Method)**).**[**[60]**](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-:5-67)

In it, Descartes lays out four rules of thought, meant to ensure that our knowledge rests upon a firm foundation:[[61]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes" \l "cite_note-68)

In *La Géométrie*, Descartes exploited the discoveries he made with [Pierre de Fermat](https://en.wikipedia.org/wiki/Pierre_de_Fermat). This later became known as Cartesian Geometry.[[62]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-:6-69)

https://www.britannica.com/biography/Pierre-de-Fermat

Because Fermat’s Introduction to Loci was published posthumously in 1679, the exploitation of their discovery, initiated in Descartes’s Géométrie of 1637, has since been known as Cartesian geometry.

SGP MahoneyMathematicalCareer, FERMAT 1636, DESCARTES 1637.

<https://en.wikipedia.org/wiki/Frans_van_Schooten>,

Van Schooten's 1649 Latin translation of and commentary on Descartes' *Géométrie* was valuable in that it made the work comprehensible to the broader mathematical community, and thus was responsible for the spread of analytic geometry to the world.

### Death

**Descartes arranged to give lessons to Queen Christina after her birthday**, three times a week at 5 am, in her cold and draughty castle. However, by 15 January 1650 the Queen actually met with Descartes only four or five times.[[72]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-Åkerman_1991-79) It soon became clear they did not like each other; she did not care for his [mechanical philosophy](https://en.wikipedia.org/wiki/Mechanical_philosophy#Descartes_and_the_mechanical_philosophy), nor did he share her interest in [Ancient Greek language](https://en.wikipedia.org/wiki/Ancient_Greek_language) and [literature](https://en.wikipedia.org/wiki/Ancient_Greek_literature).[[72]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-Åkerman_1991-79) On 1 February 1650, he contracted [pneumonia](https://en.wikipedia.org/wiki/Pneumonia) and died on 11 February at Chanut.[[76]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-83)

As a Catholic[[84]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes" \l "cite_note-books.google.be-91)[[85]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-KrR-5EKLSQMC_p._207-92)[[86]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-Gh_BAAAQBAJ_p._107-93) in a Protestant nation, he was interred in a graveyard used mainly for orphans in [Adolf Fredriks kyrka](https://en.wikipedia.org/wiki/Adolf_Fredrik_Church) in Stockholm. His manuscripts came into the possession of [Claude Clerselier](https://en.wikipedia.org/wiki/Claude_Clerselier), Chanut's brother-in-law, and "a devout Catholic who has begun the process of turning Descartes into a saint by cutting, adding and publishing his letters selectively."[[87]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-94)[[88]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-95): 137–154 **In 1663, the** [**Pope**](https://en.wikipedia.org/wiki/Pope_Alexander_VII) **placed Descartes' works on the** [***Index of Prohibited Books***](https://en.wikipedia.org/wiki/Index_Librorum_Prohibitorum)**. I**n 1666, sixteen years after his death, his remains were taken to France and buried in [Saint-Étienne-du-Mont](https://en.wikipedia.org/wiki/Saint-%C3%89tienne-du-Mont). **In 1671,** [**Louis XIV**](https://en.wikipedia.org/wiki/Louis_XIV) **prohibited all lectures in** [**Cartesianism**](https://en.wikipedia.org/wiki/Cartesianism)**.** Although the [National Convention](https://en.wikipedia.org/wiki/National_Convention) in 1792 had planned to transfer his remains to the [Panthéon](https://en.wikipedia.org/wiki/Panth%C3%A9on), he was reburied in the [Abbey of Saint-Germain-des-Prés](https://en.wikipedia.org/wiki/Abbey_of_Saint-Germain-des-Pr%C3%A9s) in 1819, missing a finger and the skull.[[note 8]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-96) His skull is on display in the [Musée de l'Homme](https://en.wikipedia.org/wiki/Mus%C3%A9e_de_l%27Homme) in Paris.[[89]](https://en.wikipedia.org/wiki/Ren%C3%A9_Descartes#cite_note-97)

#### 17th-century philosophy

<https://en.wikipedia.org/wiki/17th-century_philosophy>,

17th-century philosophy is generally regarded as seeing the start of modern philosophy, and the shaking off of the medieval approach, especially scholasticism. It succeeded the Renaissance and preceded the Age of Enlightenment. It is often considered to be part of early modern philosophy.

History

The period is usually taken to start in the seventeenth century with the work of René Descartes, who set much of the agenda as well as much of the methodology for those who came after him. The period is typified in Europe by the great system-builders — philosophers who present unified systems of epistemology, metaphysics, logic and ethics, and often politics and the physical sciences too. Immanuel Kant classified his predecessors into two schools: the rationalists and the empiricists,[1] and early modern philosophy is often characterised in terms of a conflict between these schools.

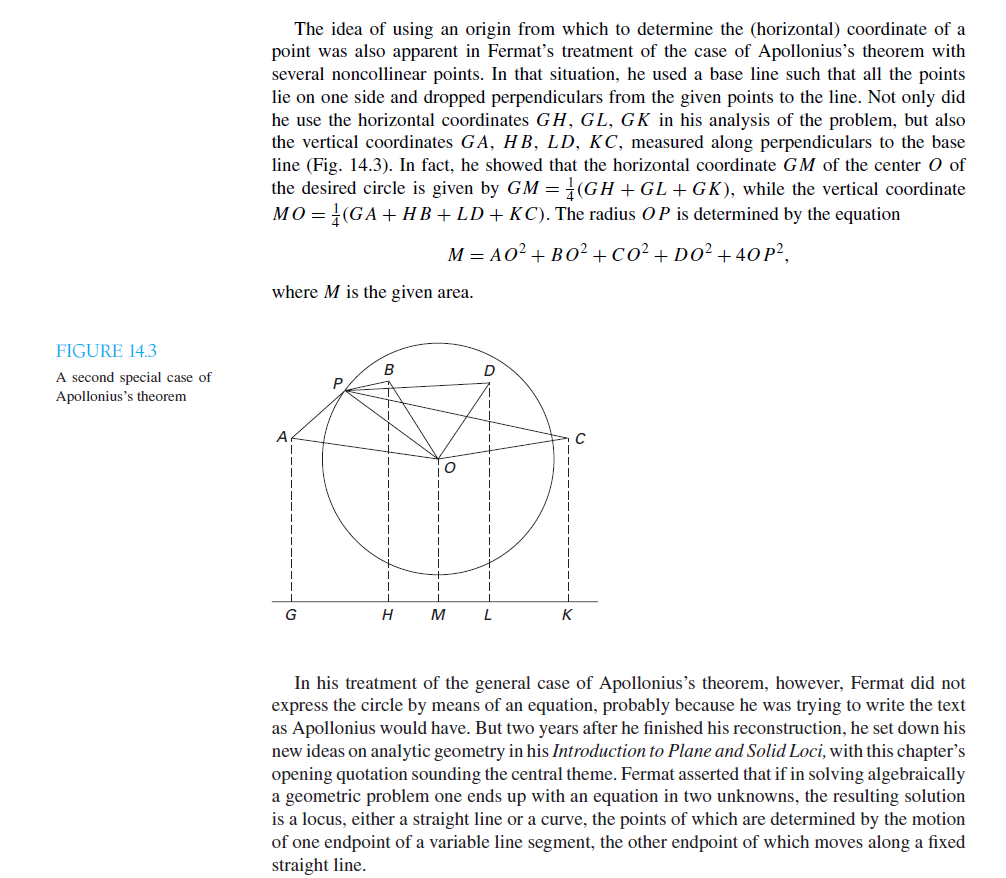
The three main rationalists are normally taken to have been Descartes (1596–1650), Baruch Spinoza (1632–1677) and Gottfried Leibniz (1646 1716). . Building upon their English predecessors Francis Bacon(1561–1626) and Thomas Hobbes (1588–1679), the three main empiricists were John Locke (1632–1704), George Berkeley (1685 1753), and David Hume (1711-1776). The former were distinguished by the belief that, in principle (though not in practice), all knowledge can be gained by the power of our reason alone; the latter rejected this, believing that all knowledge has to come through the senses, from experience. Thus the rationalists took mathematics as their model for knowledge, and the empiricists took the physical sciences.

ΣΧΟΛΙΟ. Einai 8, ενώ o HUME είναι του 18ου αιωνα. Οι εμπιριστες είναι ολοι ΑΓΓΛΟΙ, ενώ οι ΡΑΣΙΟΝΑΛΙΣΤΕΣ είναι ολοι ηπειρωτικοι ευρωπαιοι, .

ΤΕΛΟΣ 2023

## ANALYTIC GEOMETRY OF FERMAT,

### KATZ p.475.



Στο ως ανω σχημα τα A, B, C, D, einai shmeia toy epipedoy. Ζητηται να βρεθει ο γ.τ. σημειων P τετοιων ώστε

(PA)2 + (PB)2 +(PC)2 +(PD)2 = μ, opoy μ είναι δοθεν εμβαδον.

Στο «where *M* is the given area.», το σωστο είναι «where μis the given area.»,

ΣΓΠ. Στην ανωτερω κατασταση G einai η καθ ημας «αρχη των αξονων», η ευθεια GK einai ο «αξονας των-χ» (δηλ. το «Ο») και το ολον σχημα είναι «υπερανω» της ευθειας GK.

SXOLION gia θετικους.

### ΜΕΤΑΒΑΣΗ

Ανοιγω το αρχειο, MathBLykeiouBMAnalytGeom.pdf.

Είναι στο φακελλο

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