

Historia

Apostol în la

Centur

1, 2, 3, ...

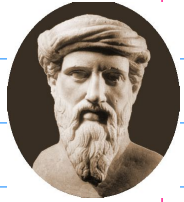
Sumerians ~ 3000 - 2300 AC

Calendar - tables de mult, sisteme de numerare sexagesimal.

Babiloniens ~ 2000 - 1600 AC

Geometrie, astronomia, ec. 2b grade. reciproci

Grecos ~ 600 AC Pitagoras



~ 300 AC Euclides

Elementos

Revolucione

∞ prius

(Ap. Thm 1.7)

~ 250

Diophantus

Aritmetica

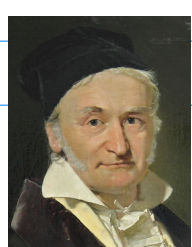
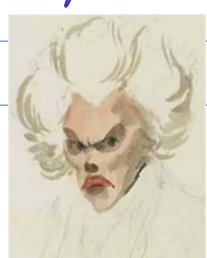
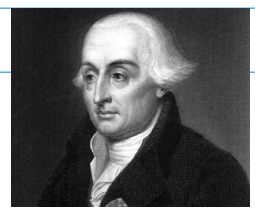
Ec. Indefinitas



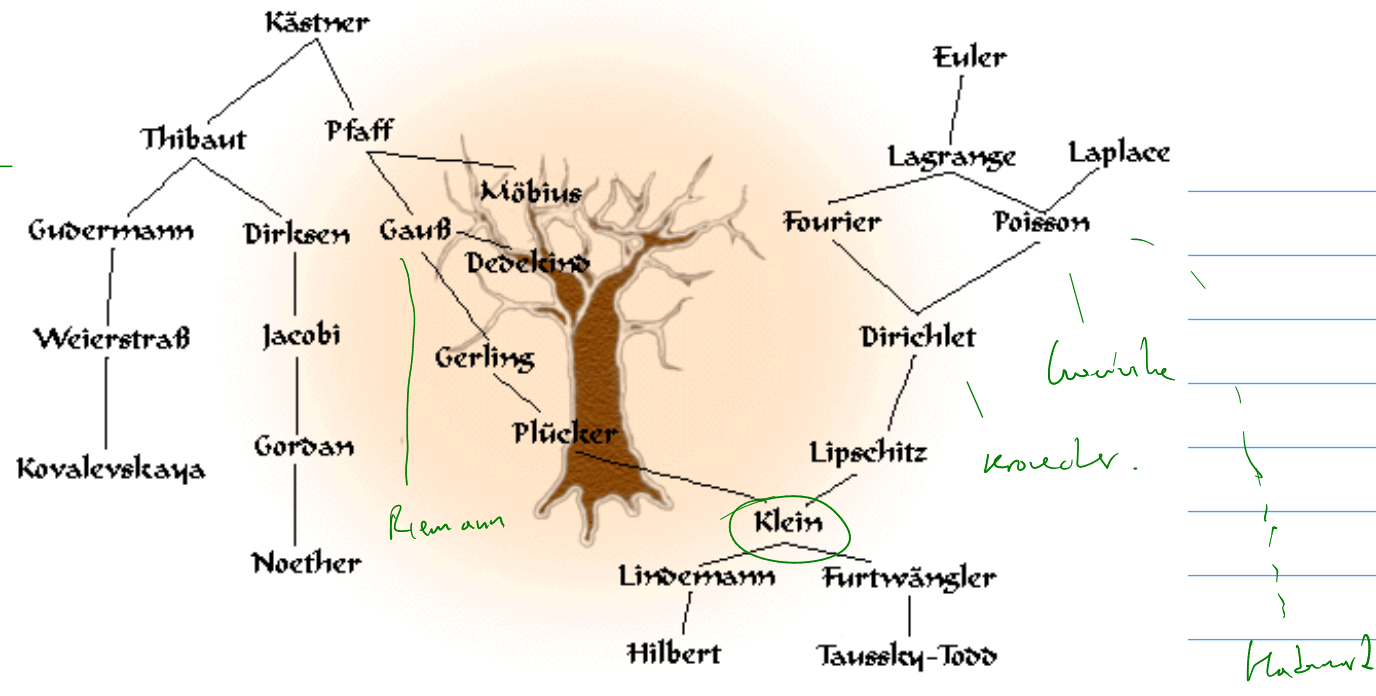
Fermat (1600 - 1665)



Euler, Lagrange, Legendre, Gauss, Dirichlet (1720 ~ 1860)



MATH
GENEALOGY



Euler intro al analisis infinito

$$\zeta(s) = \sum_{n=1}^{\infty} n^{-s} = \prod_p (1 - p^{-s})^{-1}$$

$s > 1$

Ap Th, 10 FAET
UMCA ejercicios

$s \rightarrow 1^+$
 $\zeta(s) \rightarrow +\infty$

Si sumas pmas: $\prod_p (1 - p^{-s})^{-1} \rightarrow \prod_p (1 - p^{-1})^{-1} \rightarrow +\infty$

Otra: $\zeta(2) = \frac{\pi^2}{6}$ es irracional

$\prod_p (1 - p^{-2})^{-1} \notin \mathbb{Q} \rightsquigarrow \infty$ pmas

Legendre / Gauss

$$\pi(x) := \#\{p \leq x \text{ (prim)}\}$$

$$\pi(x) \sim \frac{x}{\log x} \quad \left. \begin{array}{l} \text{Legendre} \\ \int \frac{1}{\log x} \quad \text{Gauss} \end{array} \right\}$$

Unter	gütes Primzahlen	Integral $\int \frac{dx}{\log x}$	Differ	ihre Formel	Abweich.
500 000	41 556	41 606,4	+ 50,4	41 596,9	+ 40,9
1 000 000	78 501	78 627,5	+ 126,5	78 672,7	+ 171,7
1 500 000	114 112	114 263,1	+ 151,1	114 374,0	+ 264,0
2 000 000	148 883	149 054,8	+ 171,8	149 233,0	+ 350,0
2 500 000	183 016	183 245,0	+ 229,0	183 495,1	+ 479,1
3 000 000	216 745	216 970,6	+ 225,6	217 308,5	+ 563,6

Chebyshev \rightarrow si almeno esiste

\Rightarrow es 1

Riemann (1859) $\zeta(s)$ $s \in \mathbb{C}$

zeros \leftrightarrow Primos

1896 \rightarrow Hadamard / de la Vallée Poussin

$$\pi(x) \sim \frac{x}{\log x}$$

1949 \rightarrow Selberg / Erdős

\hookrightarrow "elemental" (usa calculus)