

## A Timeline for the Foundational Crisis and the Vienna Circle

- 1874: Cantor introduces *Set Theory*. Rational and algebraic numbers are countable.
- 1879: Frege's publishes *Begriffsschrift*, which works toward the development of formal logic.
- 1893: Frege's publishes *Grundgesetze der Arithmetik, Vol I*, which aims to be the new foundation if mathematics.
- 1899: Hilbert states his 22 axioms for Euclidean geometry. Axioms are no longer considered to be self-evident truths.
- 1900: Hilbert gives his famous lecture at the International Congress of Mathematicians in Paris. He presents his 23 problems that the world of mathematics should be focusing on in the new century, which includes *Cantor's Continuum Hypothesis*, and providing a proof that arithmetic is consistent.
- 1902/1903: Frege's publishes *Grundgesetze der Arithmetik, Vol II*. However, just before it is completed, Russell finds a paradox that shakes the works foundation.
- 1910: Russell and Whitehead publish the first volume of *Principia Mathematica*.
- 1920: Hilbert begins work on "Hilbert's Program" which is a further development of *formalism*, and was intended to develop a new foundation for mathematics.
- 1922: Wittgenstein publishes *Tractatus Logico Philosophicus*.
- 1922: Schlick organizes the *Vienna Circle* along with Carnap and Hahn.
- 1926-1928: Gödel attends Vienna Circle meetings.
- 1931: Gödel's Theorem (which was his doctoral dissertation).
- 1936: Schlick is assassinated. The Vienna Circle ends.

### Ages of Key People

<u>Person</u>	<u>Age in 1910</u>	<u>Age in 1922</u>	<u>Age in 1931</u>
Immanuel Kant (1724-1804)			
Leopold Kronecker (1823-1891)			
Ernst Mach (1838-1916)	72		
Georg Cantor (1845-1918)	65		
Gottlob Frege (1848-1925)	62	74	
Henri Poincaré (1854-1912)	56		
David Hilbert (1862-1943)	48	60	69
Bertrand Russell (1872-1970)	38	50	59
Hans Hahn (1879-1934)	31	43	52
L.E.J. Brouwer (1881-1966)	29	41	50
Moritz Schlick (1882-1936)	28	40	49
Ludwig Wittgenstein (1889-1951)	21	33	42
Rudolf Carnap (1891-1970)	19	31	40
Kurt Gödel (1906-1978)	4	16	25