



Stefan Banach

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Banach

Early Life

- **Banach** was born on 30 March 1892 in *Kraków*.
- His mother was a domestic worker, **Katarzyna Banach**.
- His father was a soldier, **Stefan Greczek**.
- He was raised first by his grandmother and later by **Franciszka Płowa** in *Kraków*.
- He showed interest in mathematics very early.



Hugo Steinhaus

After the Gymnasium

- In 1910 he started studying engineering at the **Lwów Polytechnic**.
- He was excused from military service when *WWI* started.
- During the war he had several jobs, not related to mathematics.
- **Banach** was discovered by **Professor Hugo Steinhaus** in 1916.
- Their first joint work was the *On the Mean Convergence of Fourier Series*.



Scottish Café

Academic life

- **Steinhaus** introduced him to academic circles.
- He was allowed to receive a doctorate in 1920 without graduating from a university.
- He met his future wife **Łucja Braus** through **Steinhaus** as well.
- Banach's group gave birth to the "*Lwów School of Mathematics*".
- His favourite meeting place was the **Scottish Café**.
- His best-known work, the first monograph on the general theory of linear-metric space, was first published in 1931.



Banach's grave

During World War 2

- In 1939 the Soviets occupied *Lwów*, but he was able to continue his work.
- In 1941 the Germans takeover *Lwów* and all the universities were closed.
- He worked as lice feeder at **Professor Rudolf Weigl's Typhus Research Institute.**
- After the Red Army recaptured *Lwów* in 1944 he returned to the University.
- He had been promised a chair at the **Jagiellonian University.**
- He was considered a candidate for **Minister of Education of Poland.**
- Unfortunately, in January 1945 he was diagnosed with lung cancer.
- He died on 31 August 1945, aged 53.

Achievements

- Banach founded modern functional analysis.
- He was a major contributor to the theory of topological vector spaces.
- In his dissertation he defined axiomatically what today is called a Banach space.
- The importance of Banach's contribution is that he developed a systematic theory of functional analysis.
- Banach proved several fundamental results on normed linear spaces, and many important theorems are today named after him.
- The **Banach-Tarski paradox** appeared in a joint paper of the two mathematicians in 1926.



Banach-Tarski paradox



"Banach was my greatest scientific discovery."

– Professor Hugo Steinhaus