This bachelor thesis deals with one of the well-known mathematical constants, the number $\pi$. The form is understandable to higher-year students of secondary schools interested in mathematics. At first, it presents the best known ways people in history tried to approximate the number $\pi$. It includes the methods of Egyptians, the people of ancient Mesopotamia and the method of Archimedes. It also presents expressing $\pi$ in the form of infinite product according to F. Viète and J. Wallis. The second part of the thesis focuses on expressing the number $\pi$ by continued fractions, which are at first generally defined. We introduce essential relations among them. Then the thesis presents expressing the number $\pi$ in the form of continued fractions according to J. H. Lambert, L. Euler and W. Brouncker. Finally, proofs of the irrationality of $\pi$ using continued fractions are presented together with a simple proof of its transcendence. The aim of the thesis is to extend information about $\pi$ stated in popular books, to explain and clarify basic ideas leading to these claims.