



Leonhard Euler

1707-1783

The application of Kirchhoff's laws to a circuit of many nodes and loops can be extremely difficult, unless we use a branch of mathematics known as graph theory. The father of graph theory was the great Swiss mathematician Leonhard Euler, whose famous 1736 paper, "The Seven Bridges of Konigsberg," was the first treatise on the subject. He also made original important contributions to every branch of the mathematics of his day, and Euler's formula is the basis of the phasor method of solving ac circuits.

Euler was born in Basel, Switzerland, the son of a clergyman. He graduated from the University of Basel in 1724 and joined the Russian Academy of Sciences in Saint Petersburg in 1727 on the invitation of Catherine I. He served in a similar capacity at the German Academy of Sciences at the request of Frederick the Great in 1741. He was perhaps the most prolific mathematician of all time, even continuing to dictate books and papers after he became blind in 1766. He still found time for 13 children and 2 wives, the second of whom he took when he was 69 years old. Swiss mathematicians are still publishing his papers, and it is estimated that his works will eventually fill 60 to 80 large volumes.

(Source: D. Johnson, J. Johnson and J. Hilborn, *Electric Circuit Analysis*, Prentice-Hall, 1989)