This thesis introduces the Laplace transform along with the most important properties such as the region of convergence, translation theorems, scaling, conversion of convolution to multiplication or its relation to differential calculus. There is also outlined the problem of the inverse Laplace transform, especially its uniqueness. Both transforms are illustrated on the most common functions. Further a particular application on higher-order ordinary linear differential equations with constant coefficients is explored with remark about systems of first-order ordinary linear differential equations with constant coefficients.