

# Analysis Encyclopedia Article

## Analysis

The following sections of this BookRags Literature Study Guide is offprint from Gale's For Students Series: Presenting Analysis, Context, and Criticism on Commonly Studied Works: Introduction, Author Biography, Plot Summary, Characters, Themes, Style, Historical Context, Critical Overview, Criticism and Critical Essays, Media Adaptations, Topics for Further Study, Compare & Contrast, What Do I Read Next?, For Further Study, and Sources.

(c)1998-2002; (c)2002 by Gale. Gale is an imprint of The Gale Group, Inc., a division of Thomson Learning, Inc. Gale and Design and Thomson Learning are trademarks used herein under license.

The following sections, if they exist, are offprint from Beacham's Encyclopedia of Popular Fiction: "Social Concerns", "Thematic Overview", "Techniques", "Literary Precedents", "Key Questions", "Related Titles", "Adaptations", "Related Web Sites". (c)1994-2005, by Walton Beacham.

The following sections, if they exist, are offprint from Beacham's Guide to Literature for Young Adults: "About the Author", "Overview", "Setting", "Literary Qualities", "Social Sensitivity", "Topics for Discussion", "Ideas for Reports and Papers". (c)1994-2005, by Walton Beacham.

All other sections in this Literature Study Guide are owned and copyrighted by BookRags, Inc.

# Contents

<a href="#">Analysis Encyclopedia Article.....</a>	<a href="#">1</a>
<a href="#">Contents.....</a>	<a href="#">2</a>
<a href="#">Analysis.....</a>	<a href="#">3</a>

# Analysis

The word analysis comes from the Greek "analyein," which means "to break up." The basic meaning of the word is the separation of a whole into its component parts. While it is used generally in both the natural and the social sciences in several different ways, in mathematics the term analysis generally refers to the examination of **functions** of real or complex variables arising from differential and integral **calculus** including the individual elements of the functions and their relationships to each other. Technically speaking, this branch of mathematics deals with how functions converge, toward **limits** and with other limit processes. This means that analysis may be regarded as a branch of **topology**.

Analysis includes a number of techniques which act as tools to allow scientists to determine the significance of values, actions, and reactions. The various ways natural and social scientists analyze the results of experiments, observations, and so forth in the different disciplines usually include mathematical reduction of data gathered by measurement of physical phenomena, observation of processes, and statistical analysis of behavior patterns, changes, and other trends. Thus, mathematical analysis has practical applications in many fields. As phenomena from these fields are studied in detail, predicted results, reactions, or patterns are compared to real outcomes. From these comparisons, **equations** often result that can be used to explain the observations or predict future results when new conditions are introduced into a situation.