Sine Encyclopedia Article

Sine

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

Sine Encyclopedia Article.....1

Contents.....2

Sine.....3

Sine

Sine is a trigonometric function derived from the Latin *sinus* meaning curve. In a right **triangle** the sine of an **angle** (sin) is defined as the length of the side of the triangle opposite the angle divided by the length of the **hypotenuse**. sin = opp/hyp The values of the sine of an angle are always between **zero** and one for a right triangle. This function can be extended beyond 90º by using Cartesian coordinates. Values of the sine function can then be either positive or negative but still **range** between -1 and 1; these values repeat every 360º and therefore this function is considered a periodic function.

The sine function is related to the other six basic trigonometric **functions** in special relationships. The sine function is related to the **cosine** function as: cos = sin (90º -). The sine function is also related to the tangent function and can be written as: tan = sin/cos. Using these relationships in conjunction with the following the sine function can be related to the other three **trigonometric functions**, cosecant (csc), secant (sec), and cotangent (cot). csc = 1/sin The **Pythagorean theorem** for right triangles can be translated into a Pythagorean identity for sines and cosines and often appears as: $\sin^2 + \cos^2 = 1$.

The periodic nature of the sine function makes it important in applications involving the study of periodic phenomena such as **light** and electricity. A general triangle, not necessarily containing a right angle, can also be analyzed using trigonometric functions. In spherical **trigonometry**, the sine of an angle of a triangle on the surface of a **sphere** is important in surveying, navigation and astronomy.