

$$2 = 1:$$

The Illogical Reasoning and Method behind a Mathematical Fallacy

David Ryu

Mathematical Evolutions

Jennifer McCarthy and Andrew Platek

Summer Ventures in Science and Mathematics

The University of North Carolina at Charlotte

Abstract

Augustus De Morgan was a leading mathematician of logic during his time, and most significantly, the developer of the De Morgan's laws. However, in his spare time, he created the $2=1$ mathematical fallacy. This paper will analyze the $2=1$ fallacy and discuss what makes this proof a fallacy, or an illogical method. Also, this paper will focus on devising a set of steps that could be applied to similar mathematical formulas and still get the same result of $2=1$, and create more additional examples of mathematical fallacies using the same steps that De Morgan used on his formula, however, with different numbers and equations.