

Mathematical or Physics Report with Automatic Theorems

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1 Introduction

This report demonstrates LaTeX capabilities for structured academic documents.

2 Mathematical Theorems

Theorem 2.1 (Pythagoras Theorem). *In a right triangle, $a^2 + b^2 = c^2$ where c is the hypotenuse.*

Proof. Consider a right triangle with sides a, b, c . Construct squares on each side. Then the area of the square on c equals the sum of areas on a and b , so $a^2 + b^2 = c^2$. \square

Lemma 2.2. *The sum of angles in a triangle is 180° .*

3 Equations

Euler's formula:

$$e^{i\pi} + 1 = 0$$