

# 1 Mathematics

This document presents some famous mathematical equations.

## 1.1 Euler's Identity

Euler's identity combines five fundamental mathematical constants into a single equation:

$$e^{i\pi} + 1 = 0. \tag{1.1.1}$$

### 1.1.1 Alternative Form

Euler's identity can also be expressed in the following form:

$$e^{i\pi} = -1. \tag{1.1.2}$$

## 1.2 Pythagoras' Theorem

Pythagoras' theorem describes the relationship between the sides of a right triangle:

$$a^2 + b^2 = c^2 \tag{1.2.1}$$

where  $a$  and  $b$  are the lengths of the triangle's two shorter sides, and  $c$  is the length of the hypotenuse.

### 1.2.1 Alternative Form

Pythagoras' theorem can also be expressed in the following form:

$$c = \sqrt{a^2 + b^2}. \tag{1.2.2}$$

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