

# Mathematical Document

Your Name

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## Abstract

This document presents mathematical results.

## 1 Introduction

Let  $f : \mathbb{R} \rightarrow \mathbb{R}$  be a function.

**Definition 1.** *A function  $f$  is continuous if...*

**Theorem 1.** *For all  $x \in \mathbb{R}$ , we have:*

$$\int_0^\infty e^{-x^2} dx = \frac{\sqrt{\pi}}{2}$$

*Proof.* The proof follows from...

□

## 2 Main Results

Consider the equation:

$$\frac{dy}{dx} = f(x, y) \tag{1}$$