# Calculus 1 Notes

Nathan Warner

December 17, 2023

## Chapter 2

## Contents

- 2.1: The Tangent and Velocity Problems
- 2.2.1 The Limits of a Function
- 2.2.2 Infinite Limits
- 2.2.3 Finding Limits of a Trigonometric Function
- 2.3 Calculating Limits Using Limit Laws
- 2.5.1 Continuity
- 2.5.2 One-Sided Continuity
- 2.6 Limits at Infinity: Horizontal Asymptotes
- 2.7 Derivatives and Rates of Change
- 2.8.1 The Derivative of a Function
- 2.8.2 Finding The Derivatives Using The Limit Definition

### 2.1: The Tangent and Velocity Problems

### The Tangent Problem:

### Question 1

Can we find an equation of the tangent line to  $y = x^2$  at the point P(1,1)?