The Fundumental Theorem of Calculus

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The Fundumental Theorem of Calculus is a theorem which links the concepts of differentiation and integration of functions. The Fundumental Theorem of Calculus is broken into two parts.

1 The First Fundamental Theorem of Calculus

1.1 Definition

If $f(x)$ is continuous over an interval $[a, b]$, and the function $F(x)$ is defined by

$$F(x) = \int_a^x f(t)dt,$$

then $F'(x) = f(x)$ over $[a, b]$. **NEED CITATION FROM LIBRE TEXT**

1.2 Proof