Section 5.5 The Fundamental Theorem of Calculus

# Topic 1: Introduction of the Fundamental Theorem of Calculus

**Fundamental Theorem of Calculus**

If *f* is a continuous function on the interval  and *F* is any antiderivative of *f,* then

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# Topic 2: Evaluating Definite Integrals

Any antiderivative of  can be used in the fundamental theorem. One generally chooses the simplest antiderivative by letting , since any other value of *C* will drop out in computing the difference .

# Topic 3: Average Value of a Continuous Function

**The Average Value of a Continuous Function *f* over the interval ** is given by

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