

## The Fundamental Theorem of Calculus

If  $f$  is a continuous function on  $[a, b]$  then:

1. There is a function  $F$  (the *antiderivative* of  $f$ ) such that  $F'(x) = f(x)$  for all  $x$  in  $[a, b]$

2.  $\int_a^b f(x) \, dx = F(b) - F(a)$