

## CHAPTER 6

### ANTIDIFFERENTIATION

In the previous two chapters, the focus has been on differentiating a given function; i.e., given  $f$ , find  $f'$ .

Our attention now shifts to a new idea: given a function  $f$ , we seek another function  $F$  whose derivative is  $f$ . That is, given  $f$ , we seek  $F$  such that  $F' = f$ . So, in a sense, we are *undoing* differentiation, and hence the new function  $F$  is called an *antiderivative* of  $f$ .

The current chapter focuses on techniques for finding the antiderivatives of a function. It will be seen that if one has an antiderivative for a function  $f$ , then it can be used to find the *area bounded between the graph of  $f$  and the  $x$ -axis*.

