18J Higher Order Derivatives Name

Higher Order Derivatives Take the derivative again…and again…and again.

Given 

The first derivative is 

The second derivative is

The third derivative is 

The fourth derivative is 

(We could keep going, but I think you get the idea.)

Notation

If  is a function of *x*, then

  

Example 1: Show that if , then 

Example 2: If  show that .

|  |  |
| --- | --- |
| Step 1: Find . | Step 2: Take the derivative of . Leave your answer in terms of *x* and *y*. |
|  |   |

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Solution: 



Example 2: If  show that .

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