

# Goal and idea - Module 6

## **GOAL:**

Yet another type of 1st-order DE that we would like to understand and solve are those known as exact equations.

To do so, we:

- Define what exact equations are, and determine whether a DE is an exact equation.
- Discuss how to solve such differential equations.
- Introduce differentials.

## **IDEA:**

We will find that exact equations are differential equations which have a very distinct form and satisfy a certain partial derivative identity. Checking this identity is our route to knowing whether a DE is exact. From there, we must take antiderivatives--with respect to various variables--as well as partial derivatives, to aid us in solving the DEs.