## Area Estimation Using the Monte Carlo Method Exercise 8

Cesare De Cal

University of Antwerp - Erasmus Exchange

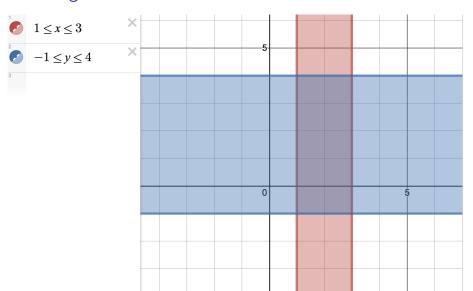
December 13, 2019

## The Problem

The exercise asks to use the Monte Carlo method to approximate the area of the figure defined by

$$\begin{cases} 1 \le x \le 3 \\ -1 \le y \le 4 \\ x^3 + y^3 \le 29 \\ y \ge e^x - 2 \end{cases}$$

## **Bounding Box**



## Full System



$$-1 \le y \le 4$$

$$x^3 + y^3 \le 29$$

$$y \ge e^x - 2$$

$$y \ge e^x - 1$$

