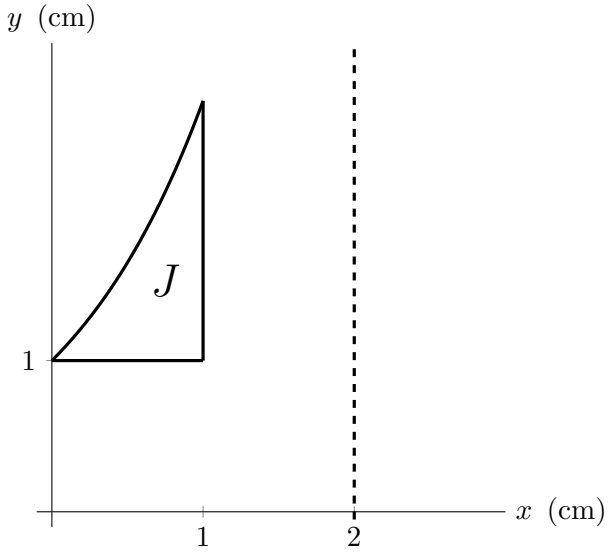
3. [10 points]

Debra McQueath hooked you up with an interview at `Print.juice`. Being a legitimate tech start-up, the `Print.juice` interview consists of answering technical questions on the spot. Debra gave you the following questions for practice.

The region J is a common `Print.juice` shape. It is bounded by $x = 1$, $y = 1$, and $y = e^x$.



a. [3 points] First, consider the solid with base J and square cross sections perpendicular to the x-axis. If the density of the solid is a function of the x-coordinate $a(x)$ g/cm^3, write an integral that represents the total mass of the solid in grams.

Answer: _____

For b. and c., consider the solid made by rotating J around the line $x = 2$.

b. [3 points] If the density of the solid is a function of the y-coordinate $b(y)$ g/cm^3, write an integral that represents the total mass of the solid in grams.

Answer: _____

c. [4 points] If the density of the solid is a function of the distance r cm from the axis of rotation $c(r)$ g/cm^3, write an integral that represents the total mass of the solid in grams.

Answer: _____