1. (5 pts) The shaded region in the figure below is bounded by the y-axis and the graphs of
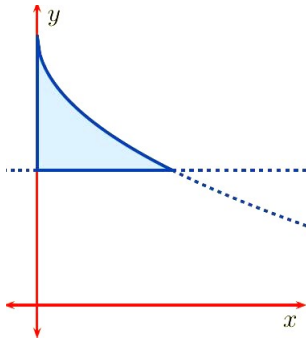
$$y = 2 - \sqrt{x}, \quad y = 1.$$

Find the **volume** of the solid obtained by rotating this above region about the **x-axis**.

2. (5 pts) Evaluate the integral

$$I = \int_0^1 x^2 e^x \, dx$$

Please fold the paper and write your NAME and UT EID clearly on the back.