Problem 1. Take the curve $y = x^3$ from $x = 0$ to $x = 2$ and rotate it around the x-axis to form a surface. What is its surface area?

Problem 2.

(a) Write an integral that calculates the circumference of the unit circle. *Hint:* The top quarter of the unit circle is the curve $y = \sqrt{1 - x^2}$ from 0 to 1. Use the arc length formula.

(b) Evaluate the integral you found in part (a) to find the circumference of the unit circle.