Problem statement Suppose C is a *positive* real number, and $f(x) = C - x^4$.

a) Sketch the region **R** bounded by $y = f(x)$ and the x- and y-axes in the first quadrant. Label the region **R**.

b) Compute the area of **R**. Your answer will use the parameter C.

c) Suppose **R** is revolved around the y-axis. Find the volume of this solid object. Your answer will use the parameter C.

d) For which value of C will the volume found in c) be equal to 1?