Name_____

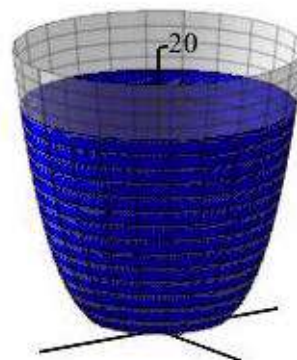MATH 172H   Quiz 1   Spring 2024

Sections 200   P. Yasskin

1. (8 points) A water tank is formed by rotating the curve
   $y = x^4$ for $y \le 20$ meters about the y-axis. It is filled to a
   depth of 16 meters. Find the volume of water in the tank.
   Set up the integral using horizontal slices.
   (Setting up the integral is 3 points.)

2. (12 points) A water tank is formed by rotating the curve $y = x^4$ for $y \leq 20$ meters about the y-axis. It is filled to a depth of 16 meters. Find the work done to pump the water out the top of the tank.

Answers can be given as a multiple of δg where δ is the densty of water and g is the acceleration of gravity is g. Don't simplify.