

Math 201 Quiz 4

Name \_\_\_\_\_ Section \_\_\_\_\_ id# \_\_\_\_\_ Serial number \_\_\_\_\_

Q1) Evaluate  $\int_0^4 \int_{\sqrt{x}}^2 \frac{1}{y^3+1} dy dx$  by changing the order of integration.

Q2 ) Use polar coordinates to find the volume of the solid inside the sphere  $x^2 + y^2 + z^2 = 16$  and outside the cylinder

$$x^2 + y^2 = 4.$$

( The solid inside the sphere is given by  $x^2 + y^2 + z^2 \leq 16$ , so by  $-\sqrt{16 - x^2 - y^2} \leq z \leq \sqrt{16 - x^2 - y^2}$  )