

## Quiz 3

Math 102, Term 171

NAME:

ID:

**Problem 1.** Using the method of cylindrical shells, find the volume of the solid obtained by rotating the region enclosed by  $y = \ln x$ ,  $y = 0$ , and  $x = e$  around  $y = -1$ .

**Problem 2.** Find the average value of  $f(x) = x^2 \tan^{-1} x$  on  $[0, 1]$ .