

Math 21B: Calculus II
Fall 2016, Sections B01-B02
Homework Sheet 7
Due: Tuesday, November 22nd, 2016

Submit your solutions to the following problems at the beginning of your discussion section on Tuesday, November 22nd. You should present your work in a clean and organized fashion, either on a printed copy of this document or a separate sheet of paper. As stated in the syllabus, late submissions will **not** be accepted.

1. Find the length of the curve $f(x) = \ln(\sec(x))$ from $x = 0$ to $x = \pi/4$.

2. Set up, but do not evaluate, an integral representing the surface area of the region obtained by revolving the curve in the previous problem about the y -axis.

3. Find the work needed to pump all the water from a conical tank with radius 4m and height 8m (see picture below). Assume the tank is initially full, and that the pump is located at the top of the tank.

