Homework 5

Math 252

Due February 18th at 11:59 PM

Work through the following problems and write your solutions on a separate sheet of paper. **Show all your work.** Half the credit comes from attempting all the problems thoroughly, and I'll select one problem at random to grade on correctness for the other half. Good luck!

2.3: 121, 123, 131, 133, 147

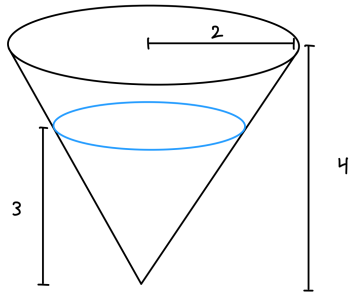
2.4: 165, 171, 177, 183, 191, 197, 201

2.5: 219, 225, 231, 235

Tank Problems

Our book sadly provides almost no good tank problems, so I've written two of my own. These are required along with the textbook exercises.

1. A tank in the shape of an inverted cone has height 4 meters and base radius 2 meters, as shown. It's filled with water (weight density 9800 $\frac{N}{m^2}$) up to a height of 3 meters. Find the work done by pumping the water out.



2. A tank in the shape of an triangular trough cone has width 2 meters, height 3 meters, and depth 10 meters, as shown. It's filled with water (weight density 9800 $\frac{N}{m^2}$) up to a height of 1 meter. Find the work done by pumping the water out.