MAT 296, Fall 2015, Quiz 7 **Score** ☐

Name: _____ (PRINT IN BLOCK LETTERS)
Date: Oct 23, 2015

No calculators will be allowed on any quiz, midterm exam or on the final exam. Using or having available any calculator or other electronic device during a quiz, midterm exam or the final exam is a violation of the Academic Integrity Policy.

Show all the steps in your solutions.

1. Let ℓ be the segment from (1,1) to (2,8) of the curve $y = x^{1/3}$. Sketch ℓ.
(a) Set up, but do not evaluate, an explicit integral for the surface area generated by revolving ℓ about the y-axis.

(b) Set up, but do not evaluate, an explicit integral for the surface area generated by revolving ℓ about the x-axis.

2. The cone shown below has radius 2ft and height 5ft. It is filled with water to a height of 3ft. How much work is done pumping all the water up and out an opening at the apex of the cone? (Use ρ for the density (lbs/ft^3) of water.)