You may only use your textbook, your notes, and your calculator on these problems. You may not use any outside resources, including tutors. Remember that the purpose of these quizzes is to see if you understand what you have learned on your homework, and also to tell you what you still need to study for the upcoming exam.

1. (4 pts) Find the volume of the solid generated by revolving the triangular region bounded by the lines
    $y = 2x,\ y = 0,$ and $x = 1$ about

    a. the line $x = 1$

    b. the line $x = 2$

2. (2 pts) Set-up the integral that will find the length of the curve: $x = \left(\frac{y^3}{6}\right) + \frac{1}{2y}$ from $y = 2\ to\ y = 3$. (You learned how to do this in Technology Project #3.)

3. (2 points) The conical tank on page 396 in your textbook is filled within 2 ft of the top with milk weighing $64.5 lb/ft^3$. How much work will it take to pump the milk to the rim of the tank? Please include a picture and all of your work.

4. (2 points) Provide one example that is best done by washer method and one example that is best done by the shell method. Explain why that method is best used for the example.