Midterm 1

Math 127
Total number of points: 50

Name (printed): _____

Signature: _____

Section number: _____

Directions:

The test is 50 minutes long. No phone, calculator, electronics, notes, talking to friends, etc. You may use only a pen or pencil. Absolutely no cheating!

Read carefully. Show your work. Check your work.

Do not turn the page until the professor says so.

Do not write below this line.

	Points		Points
1		5	
2			
3			
4		Total	

1. (10 points) Consider the region R bounded by

$$y = \sqrt{4 - x^2}, x = 0 \text{ and } y = 0.$$

Use the **disk method** to find the volume of the solid generated when R is revolved about the x-axis.

2. (10 points) Consider the region R bounded by

$$y = \sqrt{x}, y = 0, \text{ and } x = 4.$$

Use the **shell method** to find the volume of the solid generated when R is revolved about the x-axis.

3. (10 points) Find the arc length of the curve

$$y = x^{3/2}$$

on $[0, 2]$.

4. (10 points) Find the area of the surface generated when the curve

$$y = \sqrt{4x + 3}$$

on $[0, 1]$, is revolved about the x-axis.

5. (10 points) Find the mass of the thin bar given by the density function

$$\rho(x) = 5e^{-2x}$$

for $0 \leq x \leq 1$. Yep.