

# Midterm 1

Math 127

Total number of points: 50

Name (printed): \_\_\_\_\_

Signature: \_\_\_\_\_ yeye Hell yeh!!

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.

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	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.