1. **SET UP** the integral to find the area of the region bounded by the graphs of $x = y^2 - 9$ and $x = y - 3$.

![Graph 1](image1.png)

2. **SET UP** the integral to find the volume of the solid generated by rotating the region bounded by the graphs of $y = 8 - x^2$ and $y = x^2$ about the $x$-axis using vertical rectangles.

![Graph 2](image2.png)
3. **SET UP** the integral to find the volume of the solid generated by rotating the region bounded by the graphs of 

\[ y = \sqrt{x}, \quad x = 0, \text{ and } y = 1 \] about the x-axis.

Indicate your method of choice by **circling** one of the following:

- disk
- washer
- shell

---

4. **SET UP** the integral to find the volume of the solid with square cross-sections taken perpendicular to the x-axis whose base is bounded by the graphs of 

\[ y = x - 2, \quad y = 1 \text{ and } x = 0. \]
5. **SET UP** the integral to find the area of the surface formed by rotating the graph of the curve \( f(x) = x^2 \) over \([0, 2]\) about the \(x\)-axis.

6. Find the indefinite integral: \[ \int x^2 \ln x \, dx \]
7. Find the indefinite integral: \[ \int \sin^7 x \cdot \cos^3 x \, dx \]

8. **FIND** the volume of the solid formed by revolving the region in the first quadrant bounded by the graphs of \( y = \cos x, \quad x \geq 0, \quad y = 0, \quad \text{and} \quad x = \frac{\pi}{2} \) about the y-axis.

Use the method of your choice. Indicate your choice by **circling** one of the following:

- **DISK**
- **WASHER**
- **SHELL**