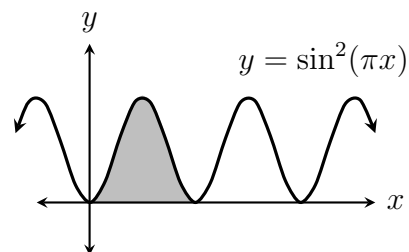

Name: _____

TEST 2 \diamond
March 28, 2024

MATH 201
R. Hammack

1. The region under $y = \sin^2(x) \cos^{3/2}(x)$, and over the interval $[0, \pi/2]$ is rotated around the x -axis. Find the volume of the resulting solid.

2. Find the area of the shaded region.



3. $\int \frac{dx}{1 - \sin(\pi x)} =$

4. $\int \cos^5(x) dx =$

5. $\int \frac{x}{x^2 + 2x + 1} dx =$

6. $\int \frac{dx}{x\sqrt{4+x^2}} =$

7. $\int \frac{3x^3 + 2x^2 + 12x + 9}{x^2 + 4} dx =$

8. $\int x^3 \sin(x^2) dx =$

9. $\int_1^{\infty} e^{1-x} dx =$

10. $\int_0^1 \ln(x) dx =$

(Note that $\ln(x)$ is not continuous on $[0, 1]$!)