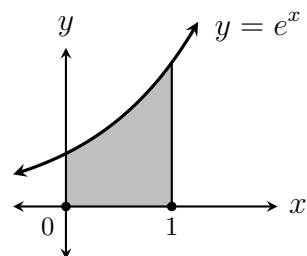

Name: _____

TEST 2 ♡
March 28, 2024

MATH 201
R. Hammack

1. Find the area of the region bounded by $y = \tan^2(x)$, $y = 0$, $x = \frac{\pi}{4}$ and $x = \frac{\pi}{3}$.

2. The shaded region below is rotated around the y -axis. Find the volume of the resulting solid.



3. $\int \frac{dx}{x^2\sqrt{4-x^2}} =$

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

5. $\int \frac{4x^2 + 6x + 1}{x^2 + x} dx =$

6. $\int x^3 e^{x^2} dx =$

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

8. $\int \frac{x - 1}{x^2 + 3} dx =$

9. $\int_5^{\infty} \frac{4}{x^3} dx =$

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

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