

Full name(s): _____ .

Questions

1. Find the surface of revolution about the x axis of the region between $f(x) = \cos(x)$ and $g(x) = \frac{1}{\sqrt{2}}$ from $x = 0$ to $x = \frac{\pi}{4}$.
2. Evaluate the following improper integral:

$$\int_1^{\infty} \frac{\cos\left(\frac{\pi}{x}\right)}{x^2} dx$$