

MATH 3D Prep: Substitution Rule

1. Find a function $f(x)$ such that $f'(x) = \cos(x)e^{\sin(x)}$ and $f(\pi) = 0$.
2. Evaluate the indefinite integral $\int \frac{3}{1-2x} dx$.
3. Evaluate the indefinite integral $\int \frac{5}{x^2 - 2x + 5} dx$.