MATH 3D Prep: Substitution Rule

Facts to Know:

Steps of computing integrals using substitution rule:

1. Choose a function \( u = \) , then \( du = \)

2. Goal: Write the integral in terms of ____________________________.

3. \( \int f(g(x))g'(x)dx = \)

Examples:

1. Find a function \( h(t) \) such that \( h'(t) = te^{t^2} \) and \( h(1) = e. \)

2. Evaluate the indefinite integral \( \int \frac{[\ln(2x+1)]^2}{2x+1} \, dx \)