

Quiz 5

1. Evaluate the integral $\int \sin 2x \cos x \, dx$.

2. Suppose that f is a continuous functions that satisfies $f(n) = \frac{1}{n!}$ for all non-negative integers n , and:

$$g(x) = \begin{cases} 1 & \text{if } 0 \leq x \leq 1, \\ 0 & \text{otherwise.} \end{cases}$$

Find $h'(5)$ where $h(x) = \int_0^{10} f(t)g(x-t) \, dt$.