1. (2 points) Evaluate the following integral.

\[ \int_{0}^{\pi/6} \frac{dx}{\sec x + \tan x} \]
2. (3 points) Evaluate the following integral.

\[ \int \sec^4 x \tan^3 x \, dx \]
3. (3 points) Evaluate the following integral.

\[
\int \sin^5 x \cos^2 x \, dx
\]
4. (2 points) Evaluate the following integral.

\[ \int \cos^2 (3x) \, dx \]