Instructions. Put your first and last name at the top of your paper. Everyone is to do their own worksheet but only one from each group is graded with the score shared. Be sure to show your work and explain your reasoning. All worksheets from each group will be collected. This worksheet has two pages, and three problems.

1. Use Part I of the Fundamental Theorem of Calculus (page 393) to find the derivative of the function.

\[
h(x) = \int_{1}^{\sqrt{x}} \frac{z^2}{z^4 + 1} \, dz
\]
2. Evaluate the integral.

\[ \int_{0}^{4} (4 - t)\sqrt{t} \, dt \]

3. Evaluate the integral.

\[ \int_{0}^{\pi/4} \sec \theta \tan \theta \, d\theta \]