

The majority of the credit you receive will be based on the completeness and the clarity of your responses. **Show all of your work and justify your solutions as much as possible.**
This is a 15 minute quiz and has 2 questions, for a total of 10 points

- (6 points) 1. Let $f(x) = \sqrt{x^2 + 4}$ for $x \geq 0$. Explain why $f(x)$ is one-to-one for $x \geq 0$. Then find
- (a) $f^{-1}(x)$ and the domain of $f^{-1}(x)$
 - (b) $(f^{-1})'(5)$.

- (4 points) 2. Evaluate the following integral:

$$\int e^x (4 + e^x)^5 dx.$$