Math 1221: Recitation 2

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1. Discuss how you would use the substitution rule to solve the following integrals. Write down what substitution you would make. You <u>do not</u> need to solve the integral.

(a) $\int \dfrac{z}{1+z^4} dz$

(b) $\int \dfrac{\sqrt{\ln(x)}}{x} dx$

(c) $\int \tan(x) dx$

2. Find the arc length of $y = \ln(\sec(x))$ from $x = 0$ to $x = \frac{\pi}{4}$.

3. (Bonus) Compute the integral

$$\int_{-1}^{1} \sqrt{1 - x^2}\,dx$$

Hint: Graph the integral and then evaluate. What is the graph of $y^2 + x^2 = 1$?