

QUIZ #3

Math 142

Name: _____

SHOW ALL WORK. Any solution that is not accompanied by the appropriate work necessary for solving the problem will receive no credit. Do not use your calculator to evaluate any limits, derivatives, or integrals. **A list of trig identities are on the back of this page.**

1. Evaluate $\int \frac{\sqrt{x^2 + 9}}{x^6} dx$

TRIG IDENTITIES

- $\sin^2(\theta) + \cos^2(\theta) = 1$

- $\tan^2(\theta) + 1 = \sec^2(\theta)$

- $\cos^2(\theta) = \frac{1}{2}(1 + \cos(2\theta))$

- $\sin^2(\theta) = \frac{1}{2}(1 - \cos(2\theta))$

- $\sin(2\theta) = 2 \sin(\theta) \cos(\theta)$

- $\cos(2\theta) = \cos^2(\theta) - \sin^2(\theta)$

- $\sec(\theta) = \frac{1}{\cos(\theta)} \Rightarrow \cos(\theta) = \frac{1}{\sec(\theta)}$

- $\csc(\theta) = \frac{1}{\sin(\theta)} \Rightarrow \sin(\theta) = \frac{1}{\csc(\theta)}$

- $\tan(\theta) = \frac{\sin(\theta)}{\cos(\theta)}$

- $\cot(\theta) = \frac{\cos(\theta)}{\sin(\theta)}$