

Math 120 Quiz #5
February 12, 2008

Name: _____

Show all work. No calculators are allowed on this quiz.

1. (5 pts.) You board a ferris wheel that makes one complete revolution every 30 seconds. At time 0, you begin at the lowest point of the ferris wheel which is 6 feet above the ground. The highest point of the wheel is 86 feet above the ground.

Find an equation that gives your height above the ground at time t , given that the height varies sinusoidally.

2. (5 pts.) Prove the following trigonometric identity: $\frac{\sec x + \csc x}{\tan x + \cot x} = \sin x + \cos x$

Bonus Problem (1 pt. extra credit):

Find the exact value of $\sin \frac{5\pi}{3}$.