High Roller Part 2 – Constructing a Sine Function

Name(s): _____ score: _____

Write down necessary steps and answers clearly to earn full credit.

The "High Roller" ferris wheel in Las Vegas is the tallest observation wheel in the world. It stands 550 feet tall and is 520 feet in diameter. There are 28 passenger cabins that are spaced equally around the wheel. Each of these cabins is a spherical pod that measures 22 feet in diameter. One entire ride (one complete revolution) on the High Roller takes 30 minutes.

1. Find a sine function $H(t) = A\sin(\omega t + \phi) + B$ where H(t) represents the height in feet at time t minutes of a person on the High Roller and H(0) = 30. Clearly show how you determined the values of the parameters A, ω, ϕ and B .

2. Find the times in minutes when the height of a rider is 200 feet. Please round your answer to the nearest tenth.