

Trig Application Problems

- Lucy is riding on a Ferris Wheel that has a radius of 40 feet. The center of the Ferris Wheel is 55 feet off the ground.
 - Draw a picture of the Ferris Wheel described.
 - If the wheel makes one complete revolution every 90 seconds, write an equation representing the height of Lucy on the Ferris Wheel, y , as a function of time in seconds, t . Remember, the rider will start at the bottom of the Ferris Wheel.
 - Using your equation, how high would Lucy be after 15 seconds? After 1 minute?
- A windmill is turning to generate power for a city. You hang a flag on the bottom of the windmill to watch its rotation. The windmill completes a rotation once every 5 seconds. The center of the windmill is 15 meters above the ground and the radius of the windmill is 7 meters.
 - Draw a graph of the motion of the flag around the windmill one time **starting at the highest point**.
 - Write an equation to represent the motion of the flag around the windmill with y representing height in meters from the ground and x representing seconds of rotation.
 - How far from the ground is the flag after 18 seconds?

3. Gina is riding on a Ferris Wheel that has a radius of 50 feet and the center of the Ferris Wheel is 60 feet off the ground. It takes the Ferris Wheel 120 seconds to make one revolution.
 - a. Draw a picture of this Ferris Wheel and graph of one rotation around it.

 - b. Write an equation to represent the motion around the Ferris Wheel, where y is the distance in feet and x is the time in seconds.

 - c. Where are Gina and her boyfriend after 2 minutes?