Honors Pre-Calculus Application Name_____Hour____

Riding on a Ferris Wheel

1) Jane is riding on a Ferris wheel with a radius of 30 feet. The wheel is turning counterclockwise at a rate of one revolution every 30 seconds. Assume that the lowest point of the Ferris wheel (6 o'clock position) is 10ft above the ground and that Jane is at the 3 o'clock position at time t=0.

Draw a diagram of the described situation

A parametric equation for a curve is based off the graph of the ordered pairs (x,y) where x= f(t) and y = g(t).

Find parametric equations to model Jane's path with respect to time.

*Consider the number of radians per second traveled for the angle-do not use rounded values)

*Which trigonometric function represents the horizontal distance from the y-axis?

*Which trigonometric function represents the vertical distance from the x-axis?

Use the parametric equations to find Jane's position 22 seconds into the ride.

2) Ron is on a Ferris wheel of radius 35 feet that turns counterclockwise at the rate of one revolution every 12 seconds. The lowest point of the Ferris wheel is 15 feet above ground level at the point (0,15) on a rectangular coordinate system.

Draw a diagram and find the parametric equations for the position of Ron as a function of time t (in seconds) if the Ferris wheel starts (t=0) with Ron at the point (35,50). Then, use the parametric equations to describe Ron's position 8 seconds into the ride.