



A local car dealer has rented a revolving, bi-directional spotlight (spotlight that shoots in 2 opposite directions) to attract attention to his car lot. The spotlight rotates at 5 revolutions per minute. The light is a perpendicular distance of 50 feet to the left of a noise reduction wall. Determine the location of the beam (from the original position (start at zero) on the wall at 1-second intervals. *Hint: Draw your picture as a top view.*



Another local car dealer has rented a revolving, **one-directional** spotlight to attract attention to his car lot. The spotlight rotates at 5 revolutions per minute. The light is positioned between two parallel noise reducing walls, 50 feet away in each direction. The light is shining a perpendicular distance of 50 feet to the right noise reduction wall. When the light strikes the left wall, assume the distance is negative. Determine the distance from the light to the location where the beam strikes the wall at 1-second intervals.

Domingo decides to ride the Ferris wheel at the local carnival. When he gets into the seat that is at the bottom of the Ferris wheel, he is 4 feet above the ground. Using what you know about Ferris wheels, sketch a picture to represent this situation with the given information.

- a) Suppose the radius of the Ferris wheel is 36 feet, how far above the ground will Domingo be when his seat reaches the top?

- b) The Ferris wheel rotates 300° counterclockwise and stops to let another passenger on the ride. How far above the ground is Domingo when the Ferris wheel stops?

- c) Suppose the radius of the Ferris wheel is only 30 feet, how far above the ground is Domingo after the Ferris wheel rotates 300° counterclockwise?

- d) Suppose the radius of the Ferris wheel is r feet. Write an expression for the distance from the ground to Domingo after the Ferris wheel rotates 300° counterclockwise.