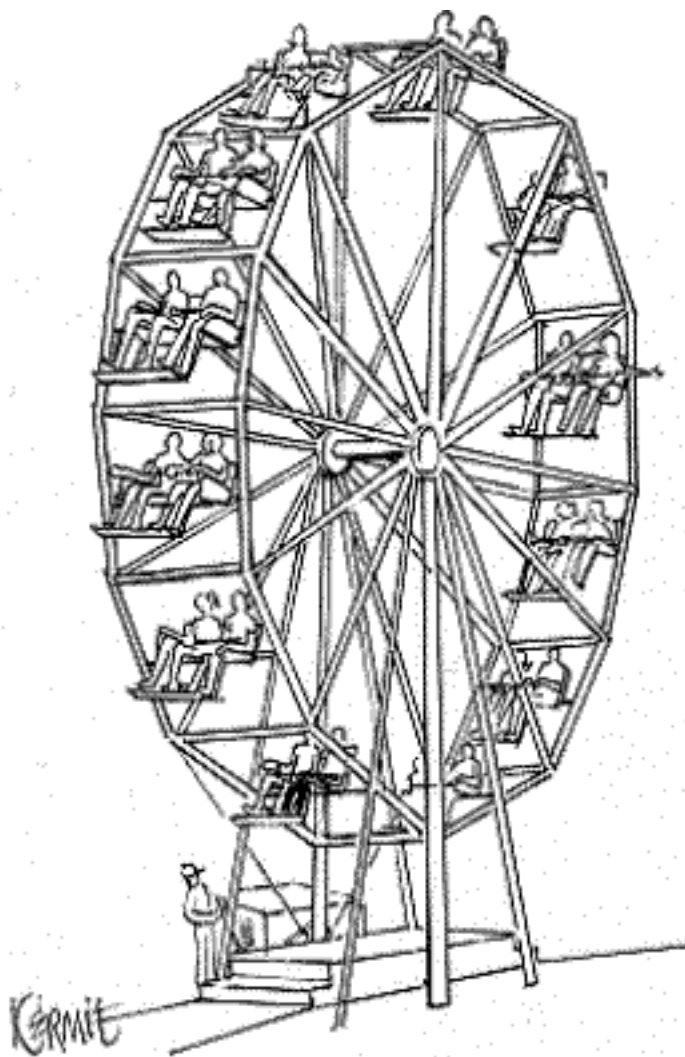# Ferris Wheel

Measurements:

Period of Rotation: _____

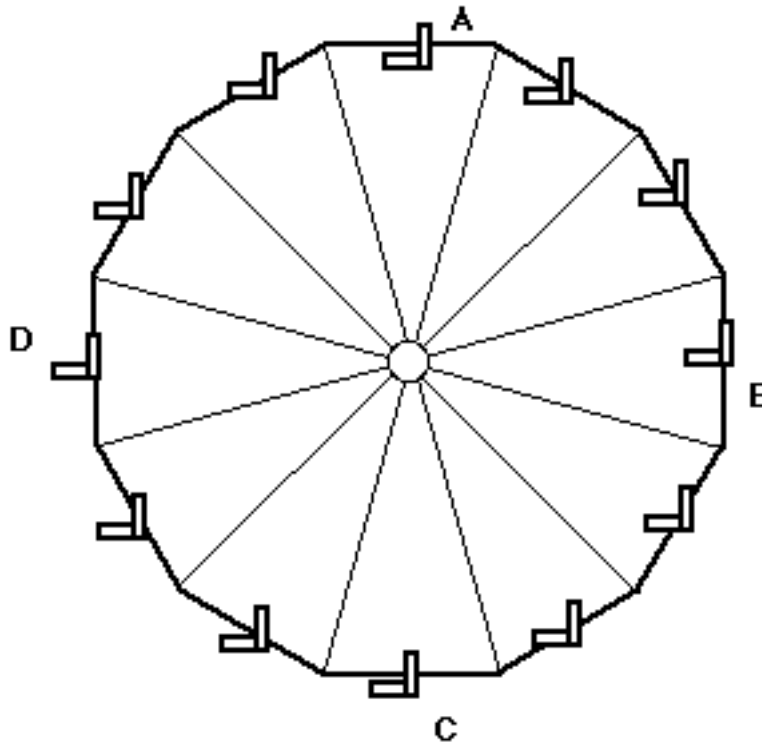Diameter of wheel: _____

Notes:

Task 1:

      Using your measurements for the period of rotation and the diameter of the wheel, calculate the tangential velocity, the centripetal acceleration and the centripetal force on the riders. Assume the mass of a person to be 60 kg .

Task 2:

      Draw free body diagrams and calculate the magnitude of the force(s) exerted on the riders by the gondola seat at each of the following locations. Use the following labels in your diagrams: vertical force from seat--**N**, the force due to gravity -- **mg** , force of static friction from seat -- **f$_s$**

A

D

B

C

Task 3:

      Ride the ferris wheel and take measurements of the acceleration at the points listed in Task 2 (You will need to use both a horizontal and vertical accelerometer). Do the values you measure agree in general with your calculations in Task 2? Explain.