**2016 Autonomous Function block requirements**

Robot Drive:

Inputs: Speed, Rotation

* Speed (s) commanded value for forward velocity of the robot
* Rotation (r) commanded value for rotational velocity of the robot

Result:

Commands the robot based on inputs being translated to the typical rightspeed, leftspeed inputs. Take care to scale properly when

Gyro Class:

Description: A wrapper class for the current gyro class. Inherits from Gyro.

* Provides all functions used by parent Gyro class
* Calibrates the gyroscope whenever encoders are stationary
* Applies calibration factor to raw gyro input
* Scales angle output to (a)
* Has function Tick() which is called to update the gyro position. Could also look into multithreading on the RoboRio to accomplish this

Robot Position:

* Let p be a path travelled by the robot
* Let **dr** be a vector of small changes of displacement
* Let dx be change in x direction
* Let dy be change in y direction

Follow Path:

* Let t be the parameter of path p
* Let p(t) be a path to be followed by the robot
* Let d be distance from the closest point on the path
* Let θ be the robots heading
* Let be the tangent unit vector to path p(t)
* Let φ be the angle
* Using all that make the robot stay on a path! :D
  + Look up Voronoi tessellation, it should help
  + Note! This list of variables is not inclusive. More should be required to accomplish this