Greetings aspiring robotics programmer! I hope you had a wonderful summer. Please share this with others who may be interested. For those that pass and make the sub-team, you will receive a special limited edition "**Team 4930 Programming Sub-Team. Kiddy Approved.**" T-Shirt, with all due pomp and circumstance. Good luck! See you in December at Try-Outs. Date/Time TBD.

2015-2016 Team 4930 Programming Sub-Team Tryout Preparation Worksheet.

Mandatory interactive programming quiz using Eclipse on your computer:

(1) 5 general questions on Java syntax which will be answered using Eclipse on your computer.

(2) Exercise: Compile then run a Java application from the command prompt that takes in user input as the first argument. I expect the code to be written using Eclipse.

(3) Demonstrate a working Fizzbuz application using Java and Eclipse.

Fizzbuzz Description: Your Java program should count to 100, replacing each multiple of 5 with the word "fizz", each multiple of 7 with the word "buzz", and each multiple of both with the word "fizzbuzz". Use the modulo operator (%) to determine if a number is divisible by another.

(4) Exercise: Using Git, create a new local branch, make a minor change and commit, then push to your account on GitHub. (You may use the command line, Github GUI, or Eclipse plug-in.)

Mandatory programming sub-team application essay:

Write a 300 word essay on why you want to be a part of the programming sub-team.

Mandatory Solo Interactive Robotics Programming Conversation:

(1) Explain command based programming verbally (whiteboard is optional). Be sure to look up and have a general understanding of concurrency and command groups.

(2) Using a whiteboard explain how you would program Tankdrive using command based programming. Hint: Minimally this includes 2 motor controllers (left and right) and 2 joysticks.

Bonus Points: If you want to impress me answer these (in increasing complexity and difficulty to the extreme).

(1) Know the classic class, method, and variable naming conventions for Java.

(2) Create a command based robot in Eclipse that has a working tankdrive which was imported from Robobuilder.

(3) Explain linear algebra for 2d transforms as it relates to mapping a robot on a 2d plane.

(4) Explain conditional probability and Bayes' theorem as it relates to artificial intelligence which could be used for robotics.