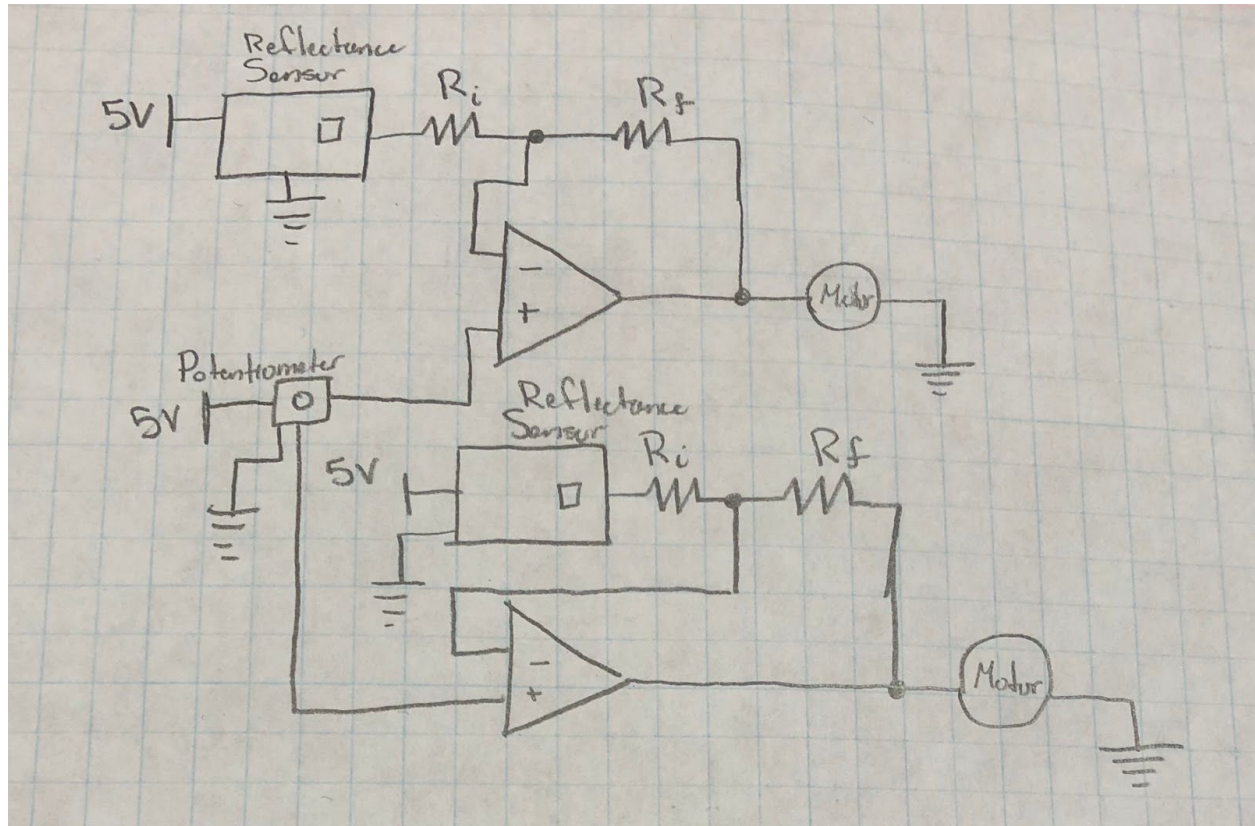


Lab 4 Prelab
Team 14

1. Draw the functional connections between the sensors and the motors here.



2. Maximum continuous current allowed from the L272: 190 mA
Max current draw of the motors: 250 mA

3. Why is it important to use large resistors for the feedback pair?

It is important to use large resistors for the feedback pair so that there will be a decrease in power consumption and we want the current flowing through to be negligible. By the equation $P = I^2 \cdot R$, a greater resistance at the same power will allow the current to approach zero.

Floor reflectance	Voltage divider voltage	Op-amp output voltage	Motor speed
Light	.399 V	-.399 V	Fast
Dark	.230 V	-.230 V	slow

Table 1: Table for the conceptual response of your circuit. Add arrows to indicate the change in respective values.

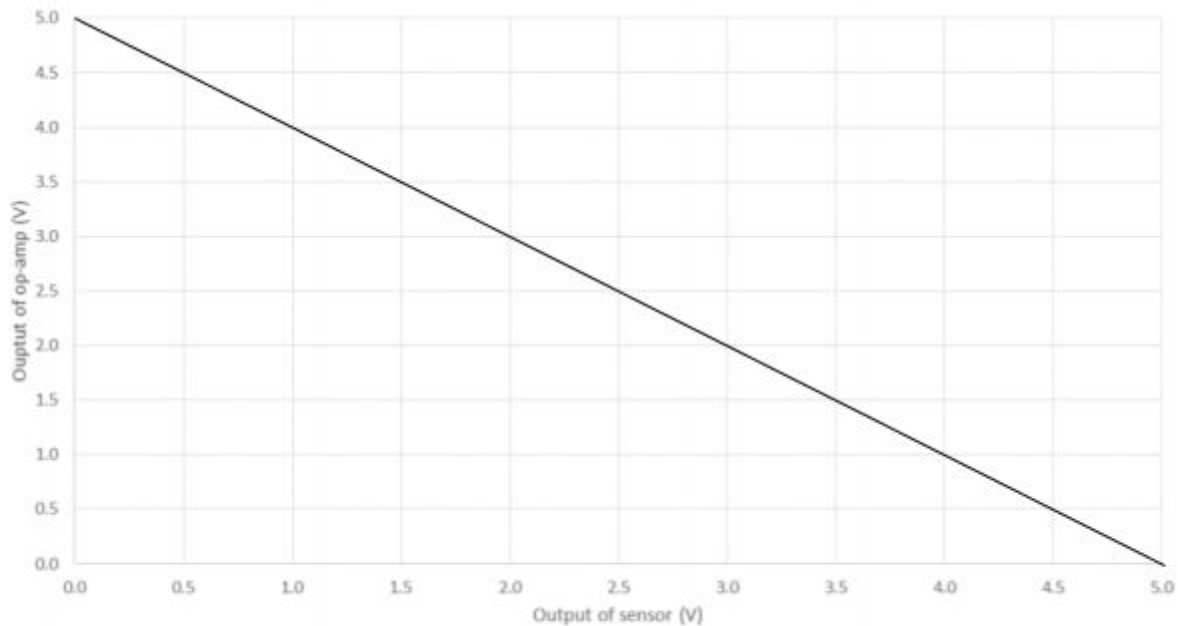


Figure 4: Graph for drawing the voltage response of the op-amp

$V_{out} = \text{slope of graph}$

$V_{out} = -R_f / R_i$

$V_{out} = -1/1$

$V_{out} = -1$

4. How will lowering the voltage reference on the non-inverting terminal of the op-amp affect the vehicle dynamics?

The op-amp will reduce the voltage to have a smaller V_{out} . Doing so reduces the voltage going through each motor, making the vehicle move slower.