

ME 210: Intro to Mechatronics

PreLab1

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Question 0.1

What are the values of resistors with the following color codes:

- (a) red red red: $2.2 \text{ k}\Omega$
- (b) brown black red: $1 \text{ k}\Omega$
- (c) yellow violet orange: $47 \text{ k}\Omega$
- (d) brown black green: $1 \text{ M}\Omega$

Question 0.2

What are the values of the capacitors with the following designations?

- (a) 223: $22 \times 10^3 \text{ pF} = 22 \text{ nF}$
- (b) 476: $47 \times 10^6 \text{ pF} = 47 \text{ uF}$

Question 0.3

- (a) Draw a schematic of the configuration you will use for Part 4 using KiCad.

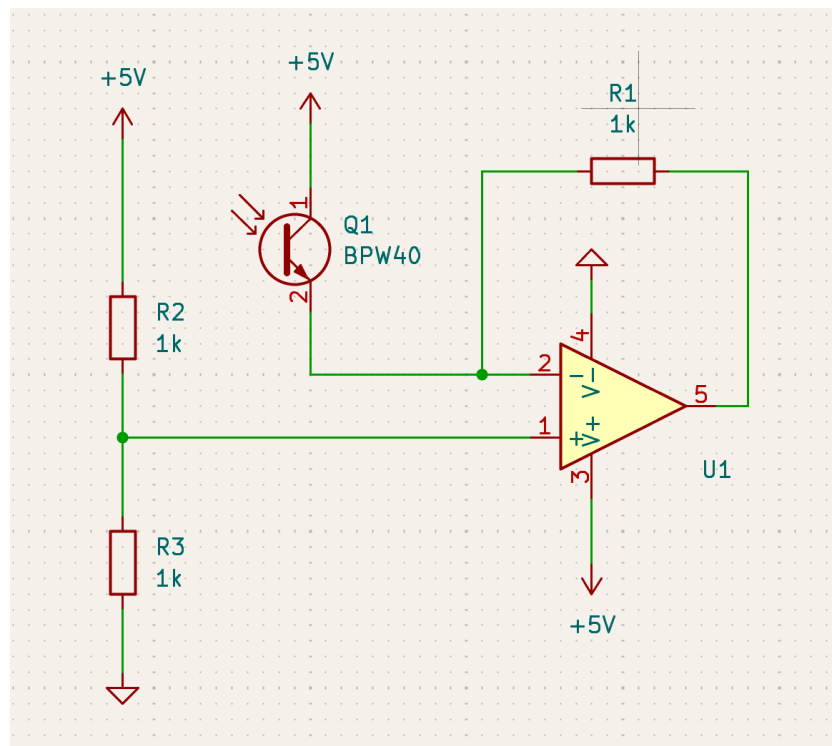


Figure 1: Waveform from adder_tb.v

Question 0.4

Write, compile, and upload a program that outputs “Hello, World!” to the serial terminal once every second on the Arduino.

```
1  void setup() {  
2      // put your setup code here, to run once:  
3      Serial.begin(9600);  
4      while(!Serial);  
5  }  
6  
7  void loop() {  
8      // put your main code here, to run repeatedly:  
9      Serial.println("Hello, World!");  
10     delay(1000);  
11 }
```

A small green square icon with a white letter 'C' inside, used for copying the code.