Complete the following steps to prototype and test your improved RLC filter circuit for Project 1.
Submit your completed worksheet to your instructor before the start of Week 6 Studio.

1. Build your circuit on the breadboard using the components available in ET 311.
2. Turn on the function generator and set up for a sine wave at 1 kHz.

Connect the output directly to the multimeter and measure the output voltage.
Adjust the voltage level to have an output voltage around 3 V rms (this does not have to be exact).

$V\_{in}$ **=**

Record the voltage measurement of your function generator:

1. Use the multimeter to measure the frequency of the function generator.

$f$ **=**

Record the frequency measurement:

1. Connect the function generator to your circuit. Test your circuit by running it at different frequencies as specified in the table below, measuring the input and output voltage at each frequency. Calculate the magnitude ratio at each frequency.

|  |  |  |  |
| --- | --- | --- | --- |
| Input frequency(kHz) | Input voltage(V rms) | Output voltage(V rms) | Magnitude RatioMR = Vout/Vin |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 9 |  |  |  |
| 10 |  |  |  |
| 11 |  |  |  |

1. Take a picture of your circuit and attach it to this worksheet.
2. In the space provided below, provide an answer to the following questions.
* Did your prototype meet the requirements? If not, what do you think happened?
* Why do you think it was necessary to measure the input voltage for every frequency setting?