Week 11 lab - Real OpAmps

Task 1

Build a **simple** inverting amplifier with a gain of 10. Use an LM741 and an input resistor R_1 around $(10 — 15)$ kΩ. Connect the input to the reference. Measure the output voltage.
Try at least 5 different LM741, and keep track which OpAmp generates which output.

Task 2

Repeat the previous assignment with all resistors increased by a factor of 10. Find the worst OpAmp and put it aside.
Assuming that there is no input offset current, deduce the input offset voltage (V_{OS}) and input bias current (I_B) for each of the OpAmp. How does it compare with the specification sheet?

Task 3

Replace the LM741 with OP27 and measure output voltage again. What can you say about the LM741 OpAmp and the OP27 OpAmp? Which one is better and why?

Task 4

Use the worst OpAmp selected in task 2. Build the bias compensation circuit and measure the deviation of the output from 0 V.

Task 5 - bonus 2 point

You will get the bonus if you are able to "fully" compensate your amplifier, i.e. the output voltage deviates from 0 V to less than 2 mV.