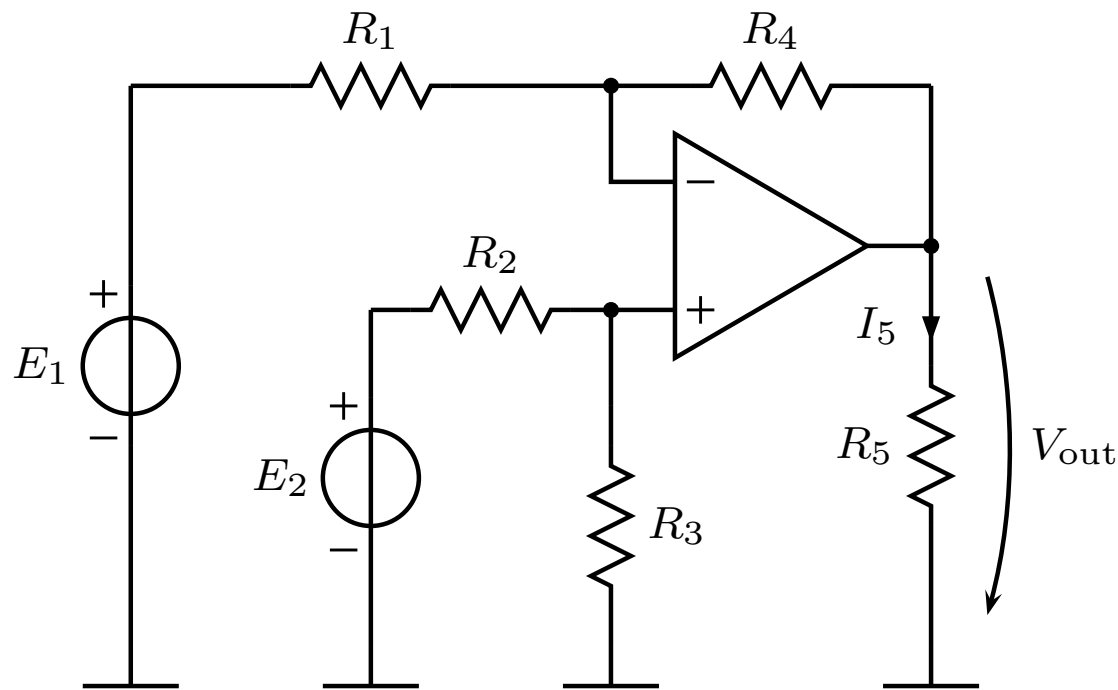


In-class exercise

- Deadline: 18:00 today

- Submission:

<https://mycourses.aalto.fi/course/view.php?id=33521§ion=2>



In this exercise, we analyze difference amplifier circuits based on ideal operational amplifiers and see if the amplifier operates at linear or saturation regions.

Find current I_5 in the circuit with the following settings. Is the operational amplifier works in its linear or saturation region?

$$R_1 = 2 \text{ k}\Omega, R_2 = 1 \text{ k}\Omega, R_3 = 5 \text{ k}\Omega, \\ R_4 = 20 \text{ k}\Omega, R_5 = 10 \text{ k}\Omega, E_1 = 3 \text{ V}, \\ E_2 = 6 \text{ V}, V_{CC} = 12 \text{ V}.$$