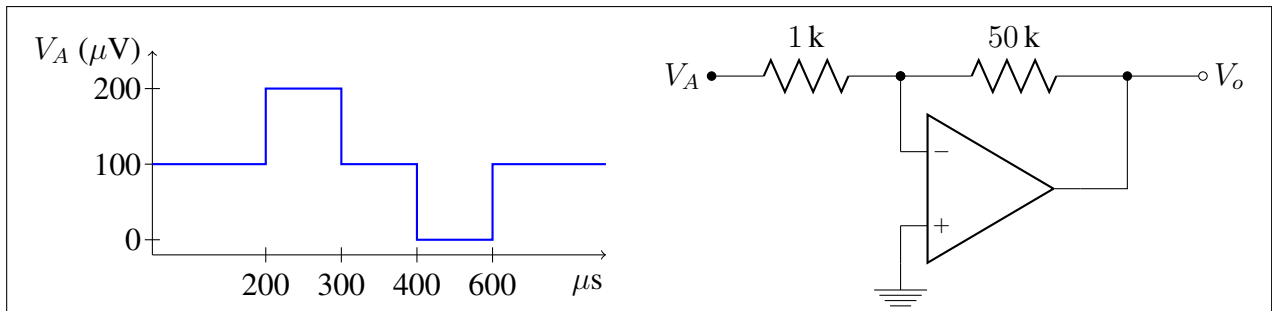


(1/5) Name _____ Student Number _____

(4/5) Please answer the following question in the space below:

Given an input waveform (below) and a circuit (right). All op-amps are ideal, except as indicated.

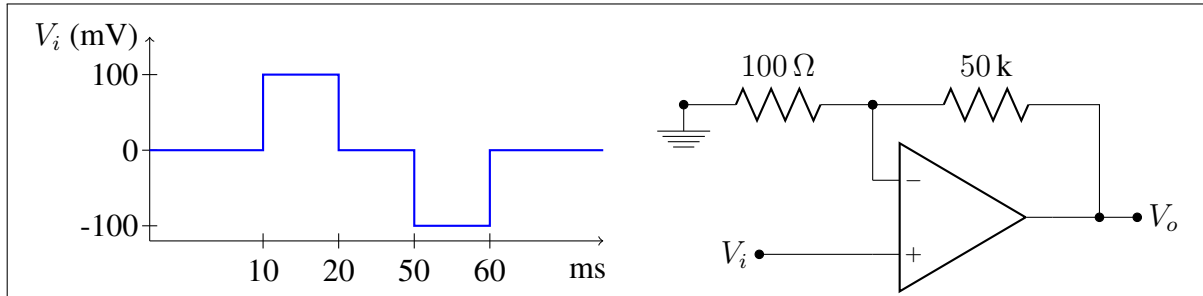


First, assume amplifiers are ideal: **Sketch** the output, V_o , and **calculate** voltages and any transition times. **Next**, using an op-amp with $V_{OS} = 5\text{ }\mu\text{V}$, sketch the waveform and calculate any values which change.

(1/5) Name _____ Student Number _____

(4/5) Please answer the following question in the space below:

Given an input waveform (below) and a circuit (right). All op-amps are ideal, except as indicated.

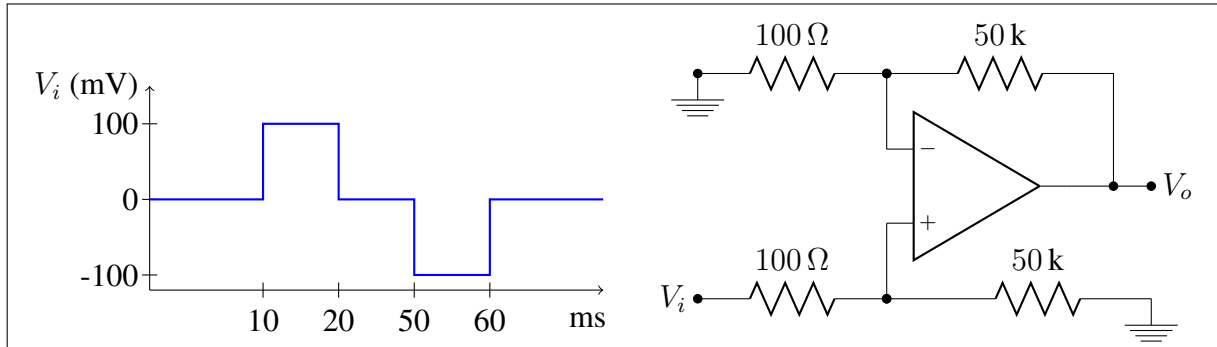


First, assume amplifiers are ideal: **Sketch** the output, V_o , and **calculate** voltages and any transition times. **Next**, using an op-amp with $I_B = 1\ \mu\text{A}$, sketch the waveform and calculate any values which change.

(1/5) Name _____ Student Number _____

(4/5) Please answer the following question in the space below:

Given an input waveform (below) and a circuit (right). All op-amps are ideal, except as indicated.

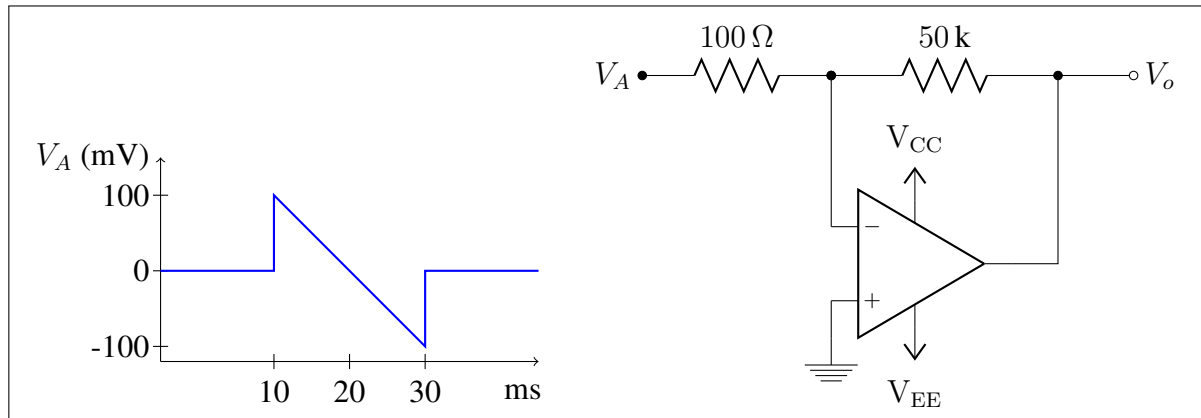


First, assume amplifiers are ideal: **Sketch** the output, V_o , and **calculate** voltages and any transition times. **Next**, using an op-amp with $I_B = 1\ \mu\text{A}$, sketch the waveform and calculate any values which change.

(1/5) Name _____ Student Number _____

(4/5) Please answer the following question in the space below:

Given an input waveform (below) and a circuit (right). All op-amps are ideal, except as indicated.

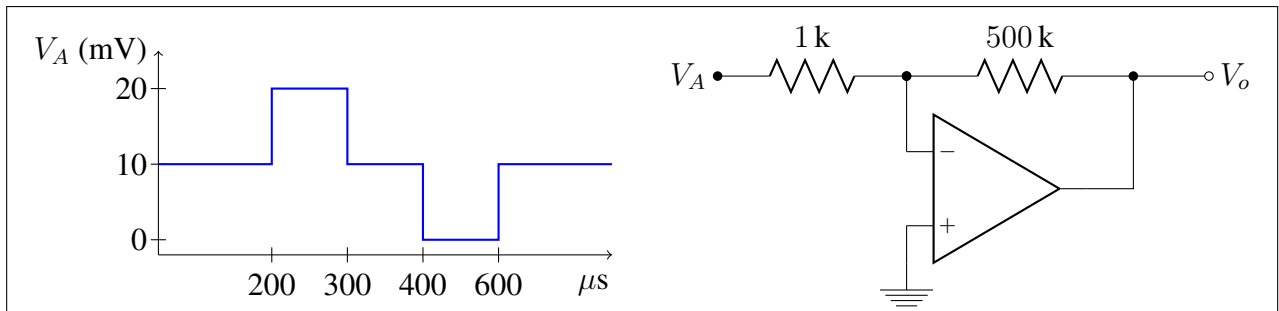


First, assume amplifiers are ideal: **Sketch** the output, V_o , and **calculate** voltages and any transition times. **Next**, using $V_{CC} = 5\ \text{V}$ and $V_{EE} = -5\ \text{V}$, sketch the waveform and calculate any values which change.

(1/5) Name _____ Student Number _____

(4/5) Please answer the following question in the space below:

Given an input waveform (below) and a circuit (right). All op-amps are ideal, except as indicated.

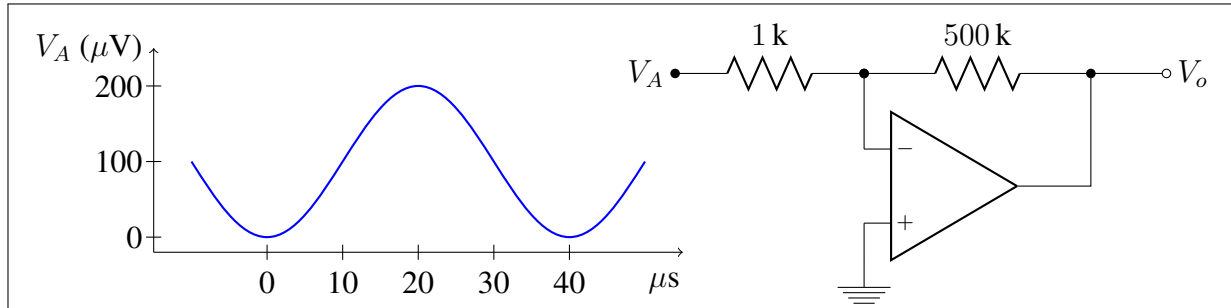


First, assume amplifiers are ideal: **Sketch** the output, V_o , and **calculate** voltages and any transition times. **Next**, using an op-amp with $\text{SR} = 0.1\text{V}/\mu\text{s}$, sketch the waveform and calculate any values which change.

(1/5) Name _____ Student Number _____

(4/5) Please answer the following question in the space below:

Given an input waveform (below) and a circuit (right). All op-amps are ideal, except as indicated.



First, assume amplifiers are ideal: **Sketch** the output, V_o , and **calculate** voltages and any transition times. **Next**, using an op-amp with $f_T = 100 \text{ kHz}$, sketch the waveform and calculate any values which change. (V_A is a single-frequency sine wave. Don't worry about phase changes).