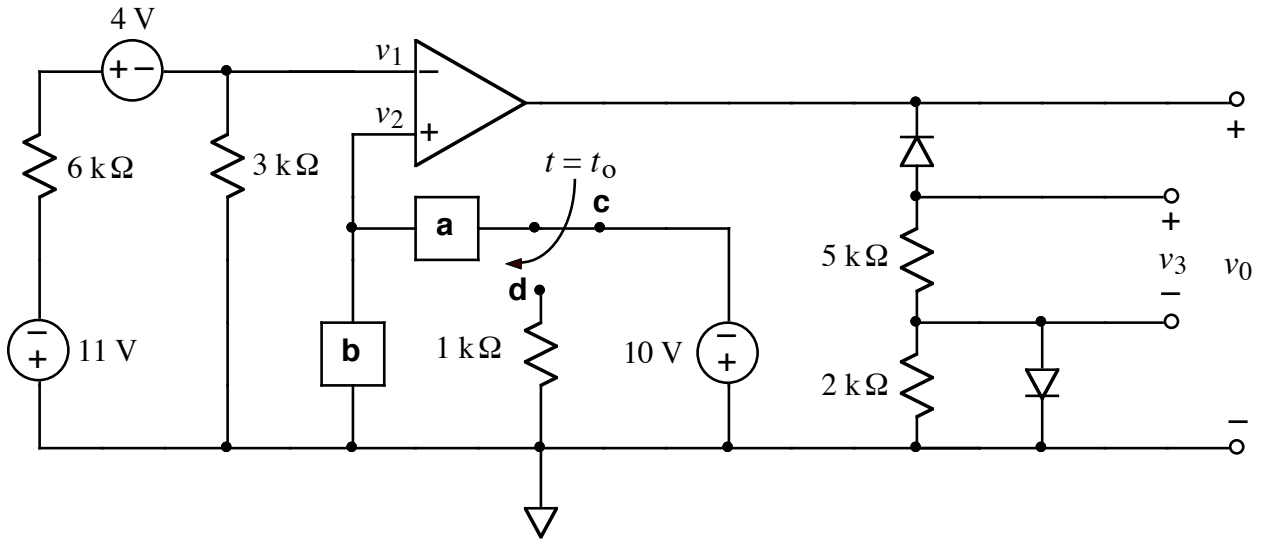


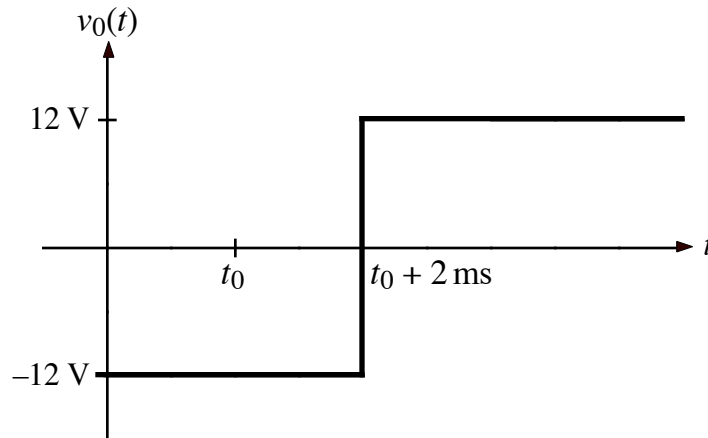


1.



After being in position **c** for a long time, the switch moves from **c** to **d** at $t = t_0$.

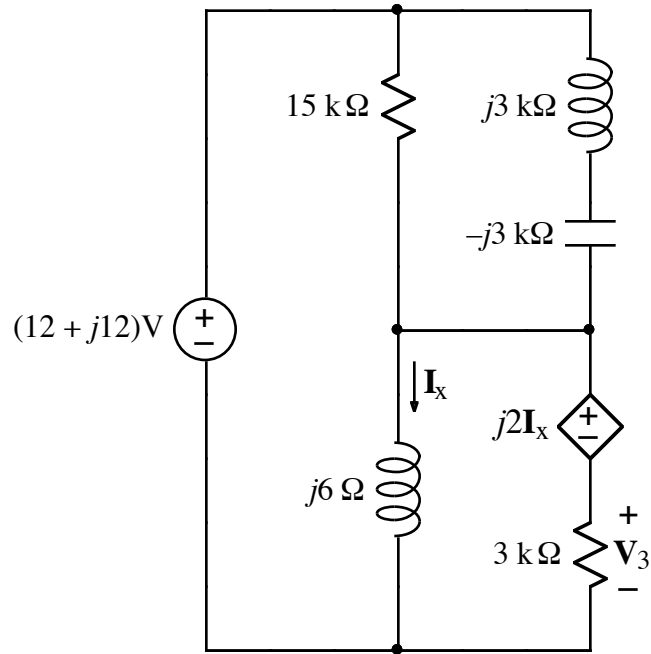
Rail voltages = ± 12 V



Choose either an R or C to go in box **a** and either an R or C to go in box **b** to produce the $v_0(t)$ shown above. (Note that v_0 stays high forever after $t_0 + 2$ ms.) Specify which element goes in each box and its value.

2. Sketch $v_1(t)$, showing numerical values appropriately.
3.
 - a) Sketch $v_2(t)$, showing numerical values appropriately.
 - b) Sketch $v_3(t)$. Show numerical values for $t < t_0$, for $t_0 < t < t_0 + 2$ ms, and for $t_0 + 2$ ms $< t$. Use the ideal model of the diode: when forward biased, its resistance is zero; when reverse biased, its resistance is infinite.

4.



A frequency-domain circuit is shown above. Write the value of phasor \mathbf{V}_3 in polar form.

5. Given $\omega = 37$ rad/s, write a numerical time-domain expression for $v_3(t)$, the inverse phasor of \mathbf{V}_3 .