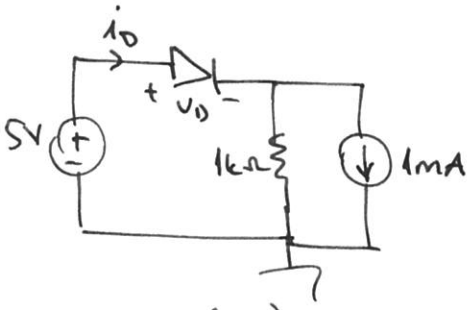
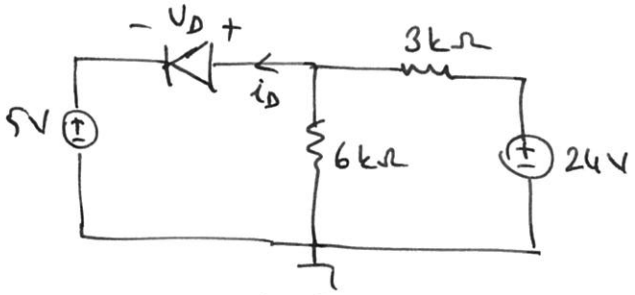
Problem 1

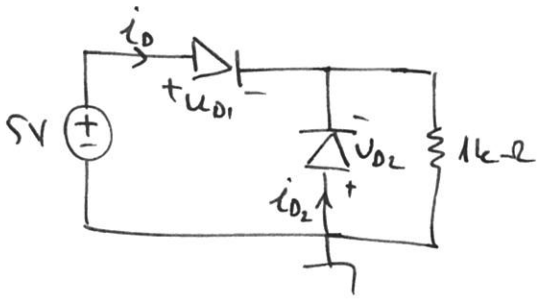
Determine V_D and i_o for the following circuits using the ideal diode model. For parts (c,d) find i_{D1}, i_{D2}, v_{D1}, v_{D2}.



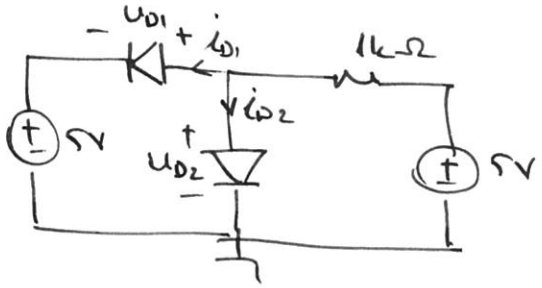
(a)



(b)



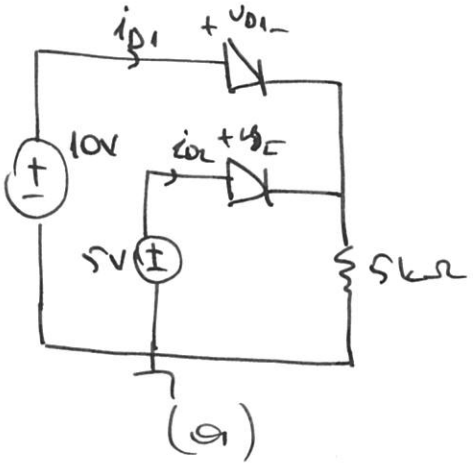
(c)



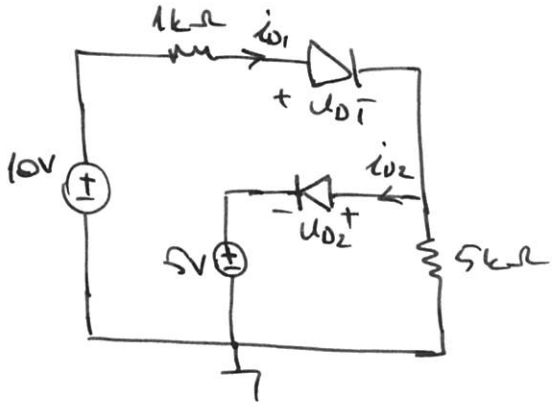
(d)

Problem 2

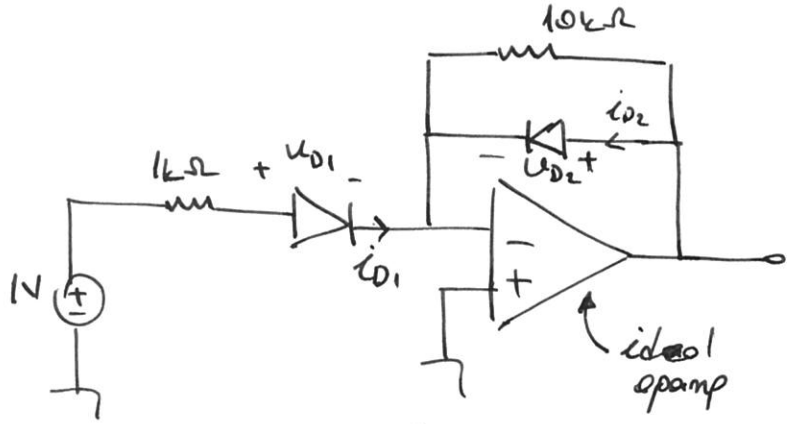
Determine i_{D1}, i_{D2}, v_{D1}, v_{D2} for the following circuits using the 0.7 V constant voltage drop model for the diodes.



(a)



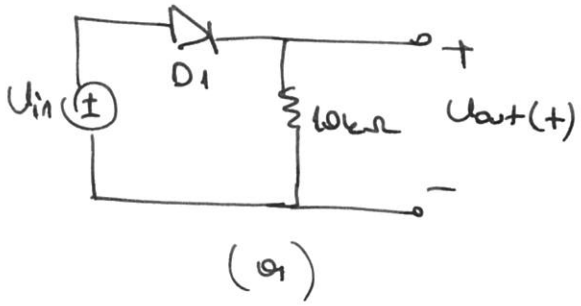
(b)



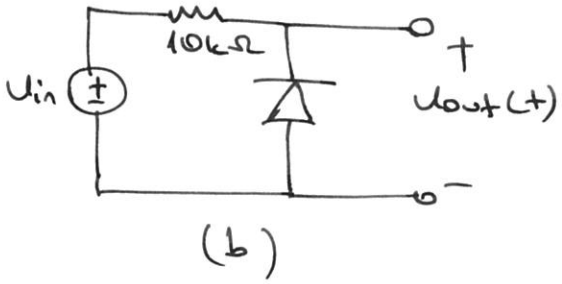
(c)

Problem 3

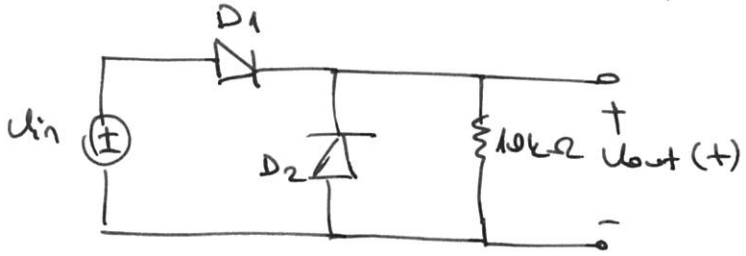
Determine and sketch $v_{out}(t)$ if $v_{in}(t) = 10\sin(2\pi t)$ V. Assume the diodes are ideal.



(a)

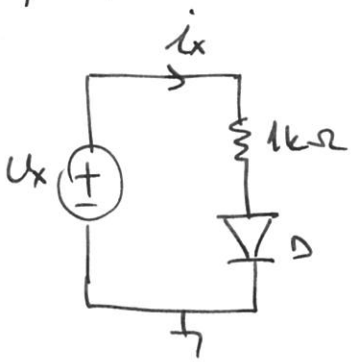


(b)

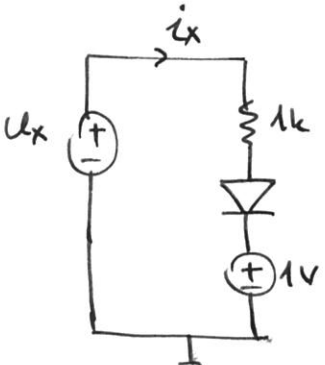


Problem 4

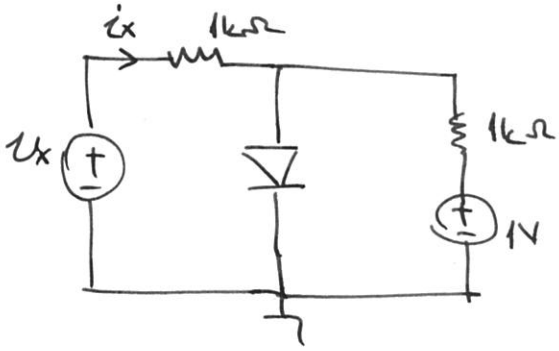
Plot i_x versus v_x using the 0.7 V constant voltage drop model for the diodes.



(a)



(b)



(c)