ECE 35, Winter 2019

Quiz 2

/ 12

Last name

First + middle name(s)

PID

Instructions:
- Read each problem completely and thoroughly before beginning.
- All calculations need to be done on these sheets.
- Write your answers in the answer boxes for each question. Make sure you list units!
- Answers without supporting calculations will receive zero credit.

▲

(1) You <u>must use nodal analysis</u> to solve this problem. Find the value of voltage v_a and of mesh current i_1. *(6 points)*
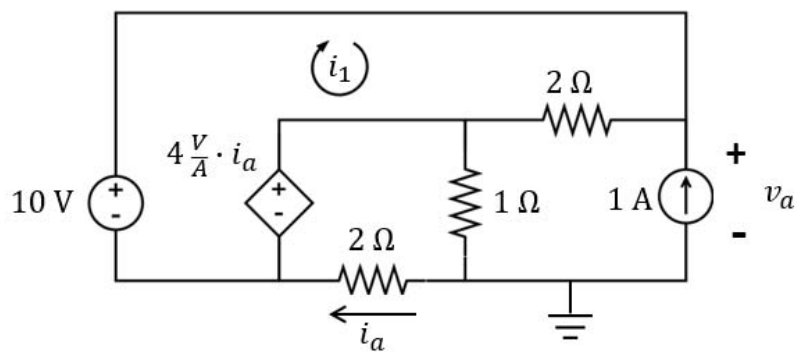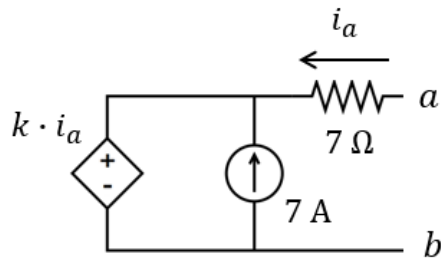
v_a [ ]

i_1 [ ]

(2) (a) For figure (a) below, find the value of k such that the Thevenin equivalent resistance between a and b is equal to 2 Ω. *(3 points)*
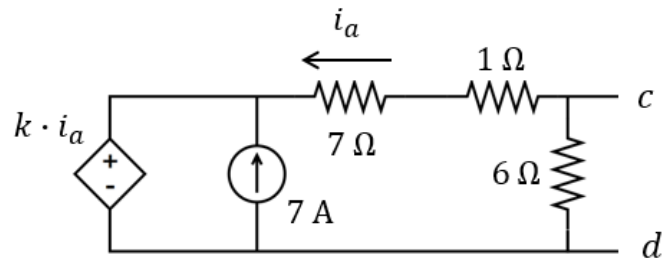
k ☐

(b) Someone chose a value of k that resulted in a Thevenin equivalent resistance of 1 Ω between a and b for part (a). With this same value of k, what load resistance R_L should be attached between c and d, in figure (b), to get the maximum power dissipated in this R_L? *(3 points)*

R_L ☐

(a)

(b)