

CASE WESTERN RESERVE UNIVERSITY
Case School of Engineering
Department of Electrical Engineering and Computer Science

ENGR 210. Introduction to Circuits and Instruments (4)

Homework Set No. 5

References: [T&R4] sections 3-3, 3-4

Issued 2/9/05

Due 2/16/05

LINEARITY - PROPORTIONALITY

1) (5 pts) Problem 3-24, p. 132.

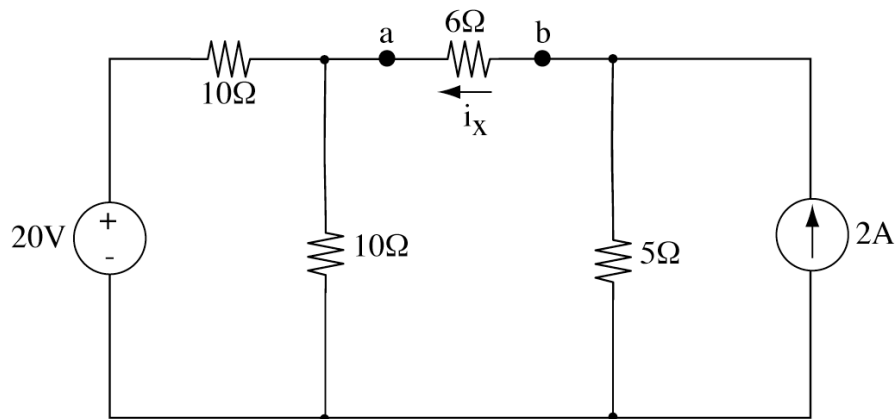
LINEARITY - SUPERPOSITION

2) (5 pts) Problem 3-29, p. 133.

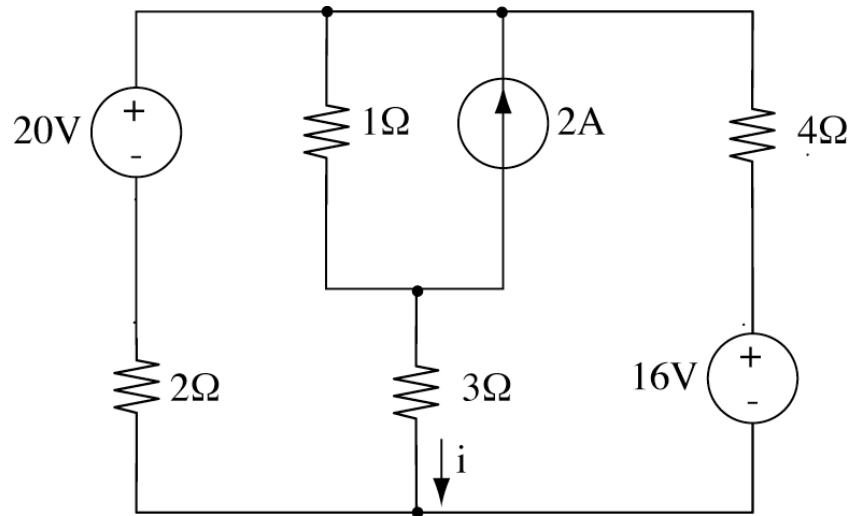
3) (5 pts) Problem 3-31, p. 133.

THEVENIN & NORTON EQUIVALENT CIRCUITS

4) Find the Thevenin equivalent looking into terminals a-b of the circuit given below and solve for i_x .



5) Use Norton's Theorem to find current I in the circuit given below.



6) A transducer is modeled as a current source I_s and a parallel resistance R_s . The current at the terminals of the source is measured to be 9.975 mA when an ammeter with an internal resistance of 20Ω is used.

(a) If adding a $2k\Omega$ resistor across the source terminals causes the ammeter reading to fall to 9.876 mA, calculate I_s and R_s .

(b) What will be the ammeter reading if the resistance between the source terminals is changed to $4k\Omega$

NOTE: Please put section code AND your CWRU e-mail next to name at top of page. Section codes are

- MA (Monday Afternoon)
- ME (Monday Evening)
- TA (Tuesday Afternoon)
- TE (Tuesday Evening)
- WA (Wednesday Afternoon)
- WE (Wednesday Evening)